



Power Macintosh Getting Started

*Setup and important health-related information
for the Power Macintosh 8100/80 and 8100/80AV*

 Apple Computer, Inc.

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Communications regulation information

FCC statement

This equipment has been tested and found to comply with the limits for a Class B digital device in accordance with the specifications in Part 15 of FCC rules. See instructions if interference to radio or television reception is suspected.

Radio and television interference

The equipment described in this manual generates, uses, and can radiate radio-frequency energy. If it is not installed and used properly—that is, in strict accordance with Apple’s instructions—it may cause interference with radio and television reception.

This equipment has been tested and found to comply with the limits for a Class B digital device in accordance with the specifications in Part 15 of FCC rules. These specifications are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation.

You can determine whether your computer system is causing interference by turning it off. If the interference stops, it was probably caused by the computer or one of the peripheral devices.

If your computer system does cause interference to radio or television reception, try to correct the interference by using one or more of the following measures:

- Turn the television or radio antenna until the interference stops.
- Move the computer to one side or the other of the television or radio.
- Move the computer farther away from the television or radio.
- Plug the computer into an outlet that is on a different circuit from the television or radio. (That is, make certain the computer and the television or radio are on circuits controlled by different circuit breakers or fuses.)

If necessary, consult an Apple-authorized service provider or Apple. See the service and support information that came with your Apple product. Or, consult an experienced radio/television technician for additional suggestions. You may find the following booklet helpful: *Interference Handbook* (stock number 004-000-00493-1). This booklet, prepared by the Federal Communications Commission, is available from the U.S. Government Printing Office, Washington, DC 20402.

IMPORTANT Changes or modifications to this product not authorized by Apple Computer, Inc., could void the FCC Certification and negate your authority to operate the product.

This product was tested for FCC compliance under conditions that included the use of Apple peripheral devices and Apple shielded cables and connectors between system components. It is important that you use Apple peripheral devices and shielded cables and connectors between system components to reduce the possibility of causing interference to radios, television sets, and other electronic devices. You can obtain Apple peripheral devices and the proper shielded cables and connectors through an Apple-authorized dealer. For non-Apple peripheral devices, contact the manufacturer or dealer for assistance.

DOC statement

DOC Class B Compliance This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus set out in the radio interference regulations of the Canadian Department of Communications.

Observation des normes—Classe B Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la Classe B prescrites dans les règlements sur le brouillage radioélectrique édictés par le Ministère des Communications du Canada.

VCCI statement

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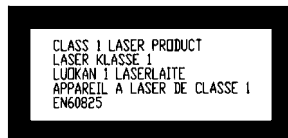
取扱説明書に従って正しい取り扱いをしてください。

CD-ROM drive

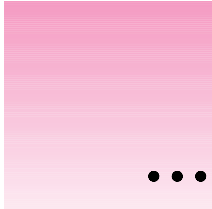
WARNING Making adjustments or performing procedures other than those specified in your equipment's manual may result in hazardous exposure.

WARNING Do not attempt to disassemble the cabinet containing the laser. The laser beam used in this product is harmful to the eyes. The use of optical instruments, such as magnifying lenses, with this product increases the potential hazard to your eyes. For your safety, have this equipment serviced only by an authorized Apple service provider.

If you have an internal Apple CD-ROM drive in your computer, your computer is a Class 1 laser product. The Class 1 label, located on the computer, indicates that the drive meets minimum safety requirements.



Class 1 label



Welcome to Power Macintosh



Congratulations on the purchase of your new Macintosh. Your computer is designed to give you the highest performance combined with real ease of use—it's easy to set up, easy to use, and easy to expand. This manual will guide you through the setup procedure, tell you how to expand your Macintosh, and provide many tips on using your new system.

Your Macintosh is powered by the new **PowerPC** microprocessor (or “chip”). This microprocessor was designed by Apple Computer, Inc., Motorola, Inc., and IBM Corporation. The **PowerPC** microprocessor uses Reduced Instruction Set (RISC) technology to deliver very high performance at the lowest possible cost. The **PowerPC** RISC microprocessor represents the state of the art in microprocessor design.

Your new Macintosh will run almost all your existing Macintosh software, but for best performance and greatest speed, look for the new software programs designed especially for Power Macintosh computers. You'll find Power Macintosh programs at any software store that carries products for Macintosh.

Setting Up Your Computer and Learning the Basics

Chapter 1 Setting Up

Chapter 2 Safety and Health Information

Chapter 3 Learning to Use Your Computer

Chapter 4 Basic Skills

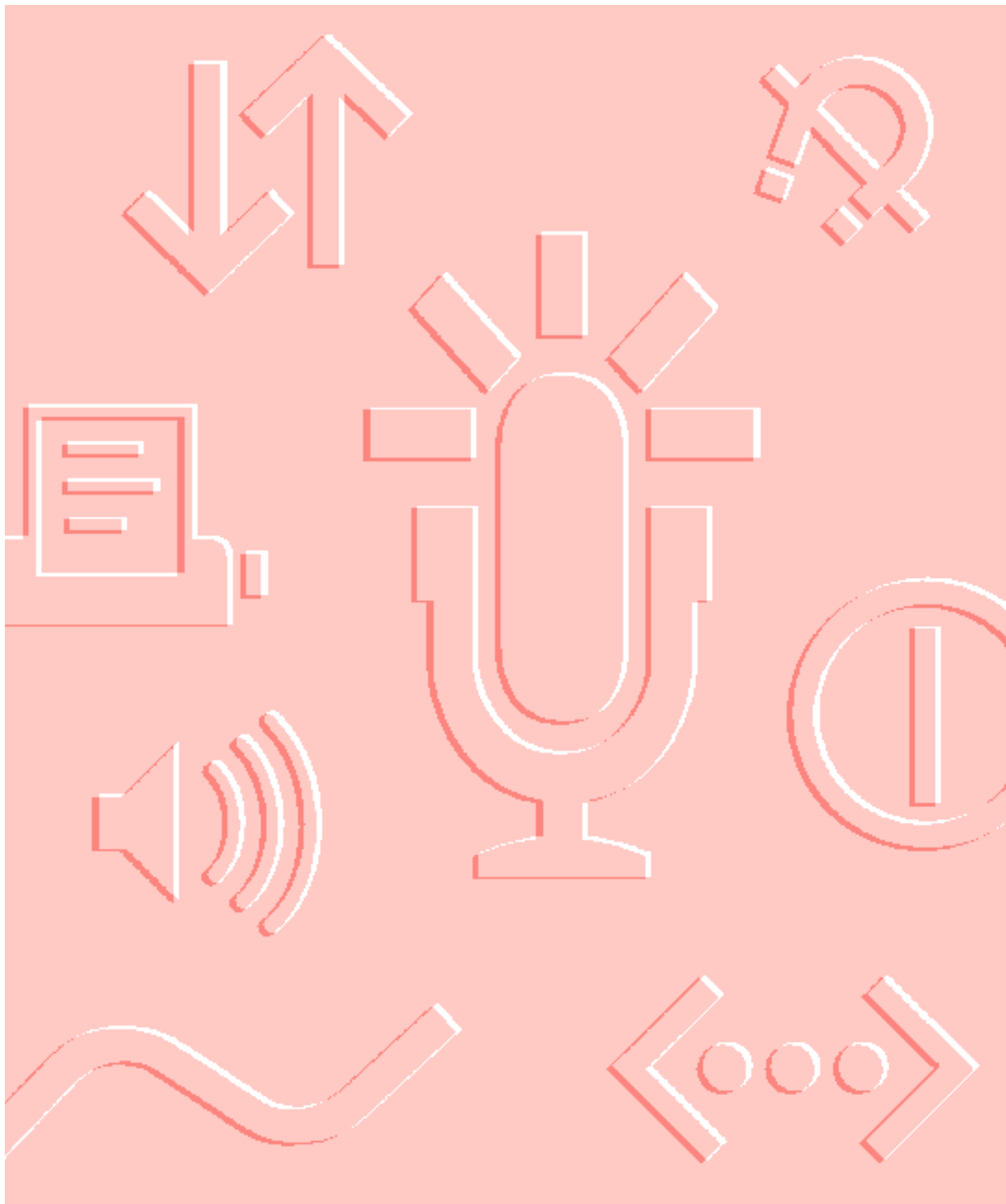
Part I of this book provides the information you need to set up and learn about your Macintosh. It includes instructions for

- m** Setting up the computer and turning it on
- m** Using the computer safely
- m** Learning basic Macintosh skills

If you are new to the Macintosh, go through all the chapters in this section. You'll find a tutorial in Chapter 3 that will acquaint you with Macintosh skills.

If you're an experienced Macintosh user, go through the setup instructions in Chapter 1 and read the health and safety information in Chapter 2, then proceed to Part II, "More About Your Macintosh."

part

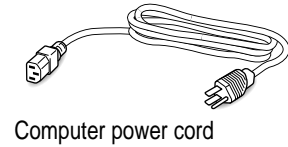
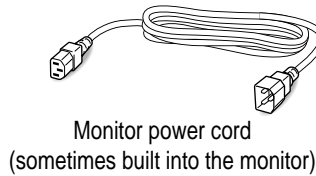
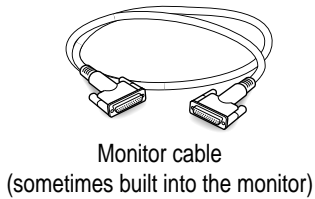
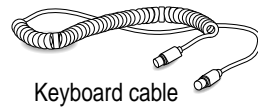
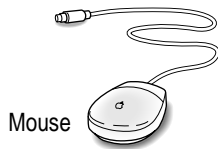
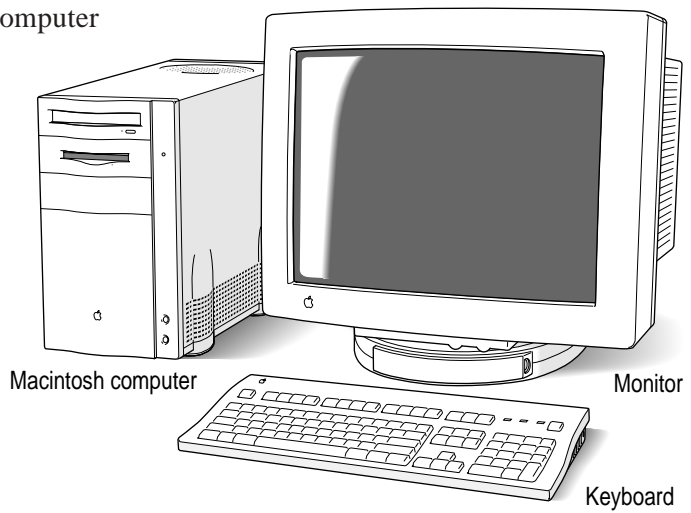


Follow the instructions in this section to set up your computer

1 Setting Up

Setting up your computer involves these steps:

- Plugging in the computer
- Connecting a monitor
- Connecting the mouse and keyboard
- Turning the computer on



Plugging in the computer

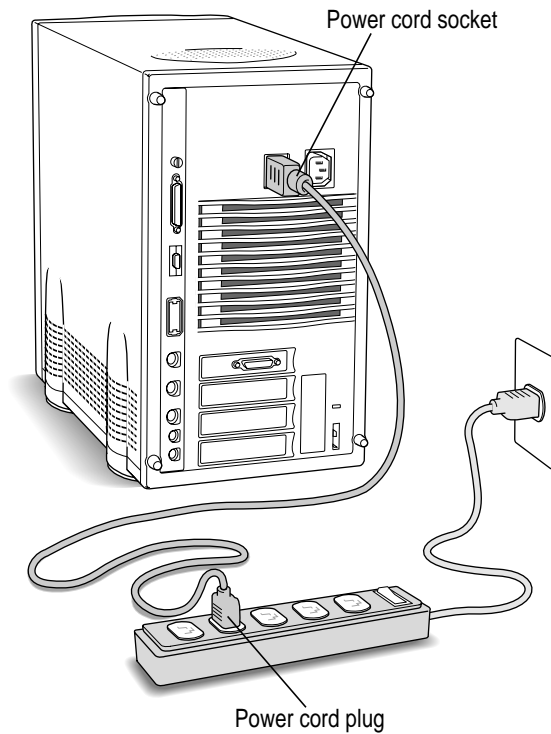
Before you plug your Macintosh into a wall socket, carefully read all the installation instructions in Chapter 1. Then, before you connect anything to your Macintosh, follow the instructions below to plug it in. The plug grounds and protects the computer from electrical damage while you are setting up.

When you are ready to begin:

- 1 Plug the socket end of the computer's power cord into the recessed power plug (marked with the symbol ~) on the back of the computer.**
- 2 Plug the other end of the power cord into a three-hole grounded outlet or power strip.**

Choose a power outlet to which you have easy access.

WARNING This equipment is intended to be electrically grounded. Your Macintosh is equipped with a three-wire grounding plug—a plug that has a third (grounding) pin. This plug will fit only a grounded AC outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact a licensed electrician to replace the outlet with a properly grounded outlet. Do not defeat the purpose of the grounding plug!



IMPORTANT Be sure at least one end of the power cord is within easy reach so that you can unplug the computer when you need to.

If the computer starts up: If you hear a tone, the computer has started up and you need to turn it off before proceeding. The power switch is located on the back of the computer and is marked with the symbol ⓪ . Press the switch to turn the computer off.

Installing an expansion card

If you purchased any expansion cards for your Macintosh, install them now (see “Installing an Expansion Card” in Chapter 5 for instructions). If you don’t have an expansion card, go on to the next section, “Connecting a Monitor.”

Connecting a monitor

You can connect many types of monitors to your Macintosh, including:

- Apple AudioVision monitors. AudioVision monitors include built-in speakers, a microphone, video, and an ADB port (for an input device such as a keyboard).
- Most standard monitors. See the *Technical Information* booklet that came with your computer for a complete list.

This section contains instructions for connecting both types of monitors. To connect a monitor from a manufacturer other than Apple, also refer to the instructions that came with the monitor.

Connecting the monitor's power cord

Monitors have two cords to connect: a power cord and a monitor cable. To connect the monitor power cord:

1 Place the monitor where you will be using it.

Keep in mind these considerations:

- Allow a few inches for air circulation around the computer and monitor.
- Make sure the top of the screen is slightly below eye level when you're sitting at the keyboard.
- Position the monitor to minimize glare and reflections on the screen from overhead lights and windows.
- Consult "Arranging Your Office" in Chapter 2 for suggestions about locating your computer equipment.

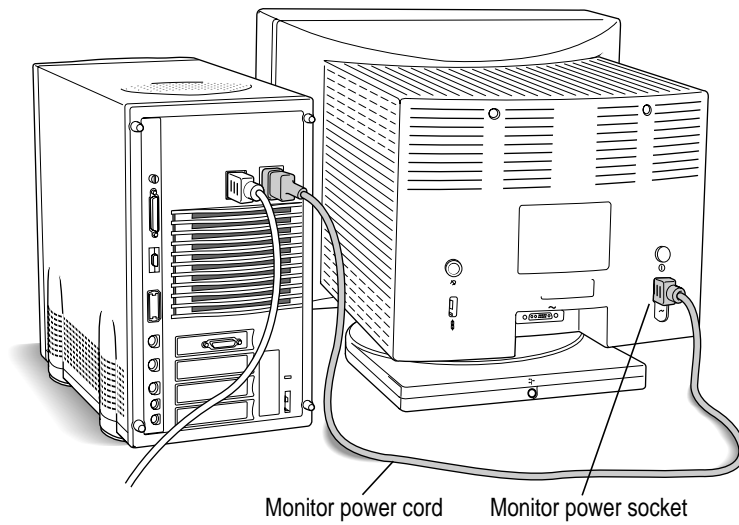
2 Connect the monitor's power cord to the monitor.

On some monitors, the cord is already attached.

3 Plug in the monitor's power cord.

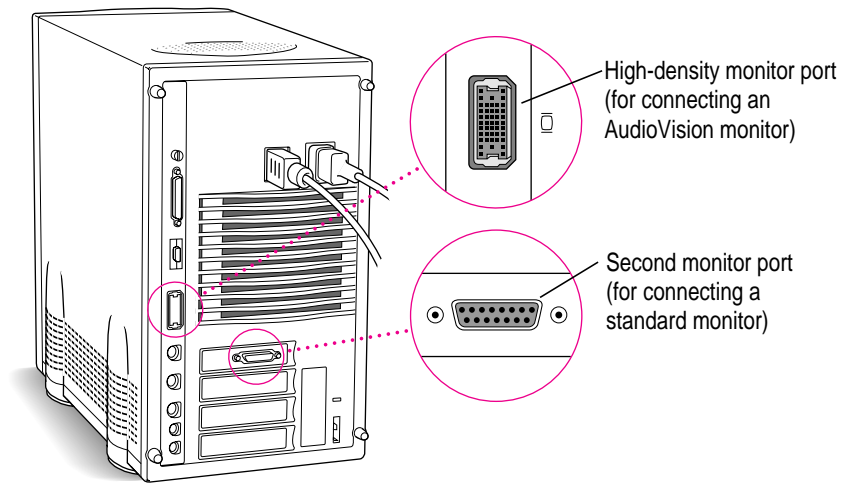
Some power cords are designed to plug into the back of your computer. You can also plug the power cord into a grounded electrical outlet (an adapter may be needed).

Some monitors have to be connected to a grounded power outlet, not to the computer's power socket. Check the information that came with the monitor.



Connecting the monitor cable

After you plug in the monitor's power cord, you connect the monitor cable to the computer's monitor port. Your computer has two monitor ports: a standard monitor port, and a high-density monitor port for AudioVision monitors. The high-density port accepts a monitor with a screen 16 inches or smaller (measured diagonally).



You can connect one or two monitors of either type, or one of each type.

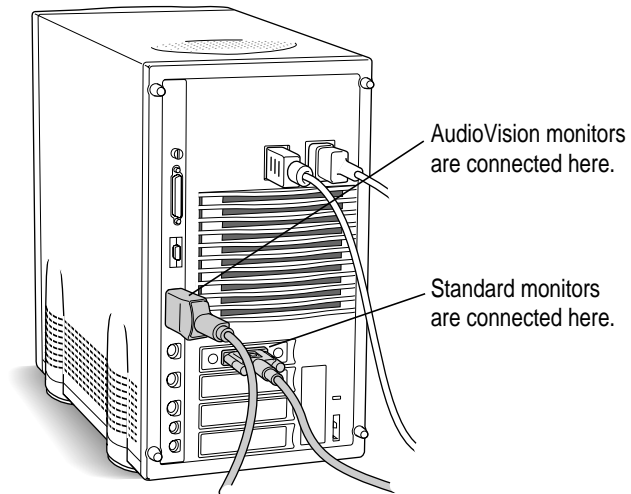
To connect the monitor cable:

- 1 Attach the monitor cable to the monitor.**

On some monitors, the cable is already attached.

2 Attach the monitor cable to one of the monitor ports on the back panel of the computer.

If the monitor is an AudioVision model, such as the Apple AudioVision 14, attach the monitor cable to the computer's high density monitor port. If the monitor is a standard model, attach the monitor cable to the standard monitor port.



If you have an AudioVision monitor, see the information that came with the monitor to use its special features.

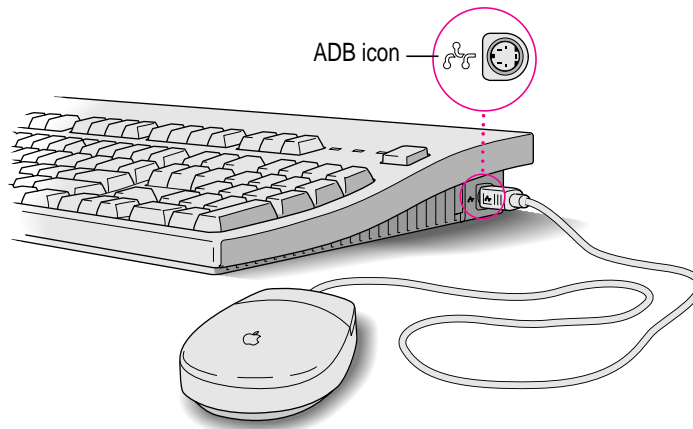
Connecting the mouse and keyboard

You have a choice of several keyboards for your Macintosh. They are all connected the same way.

- 1 Plug the mouse cable into the port on either side of the keyboard.**

Most right-handed people prefer to use the mouse with their right hand; most left-handed people prefer to use their left hand. Plug the mouse into the port on the side you prefer.

The plug and the port are marked with the same icon (⌘). Align the icons before you insert the plug. The positions of the port and icon on your keyboard may be different from those pictured.



By the way: The ⌘ icon is called the Apple Desktop Bus (ADB) icon.

- 2 Plug the keyboard cable (both ends are the same) into the other port on the keyboard.**
- 3 Plug the keyboard cable into the port on the back of the computer marked with the ⌘ icon.**

Some monitors have a port to which you can connect the keyboard or mouse. See the information that came with your monitor.

Connecting other devices


If you are new to the Macintosh: It's a good idea to get some experience with your computer before connecting other devices, such as a printer or scanner. Go through the rest of the material in Part I, including the learning materials in Chapter 3.

When you are ready to connect other devices to your Macintosh, follow the instructions in Chapter 5.

Turning the computer on

To turn on the computer for the first time, follow these steps.

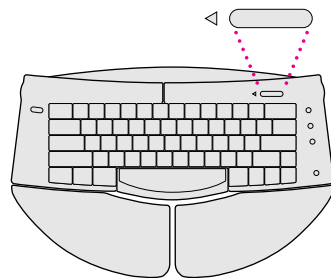
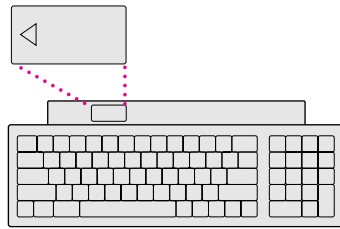
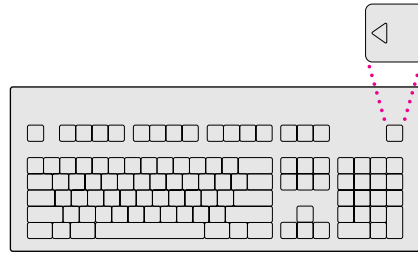
1 Turn on the monitor.

See the information that came with your monitor for the location of the power switch. On Apple monitors, the power switch has this icon: .

By the way: You only need to turn on the monitor once. From now on, the monitor will turn off automatically when you shut down the computer, and it will turn on automatically when you start up the computer. (If the monitor is not plugged into the computer, it must be turned on separately each time you turn on the computer.)

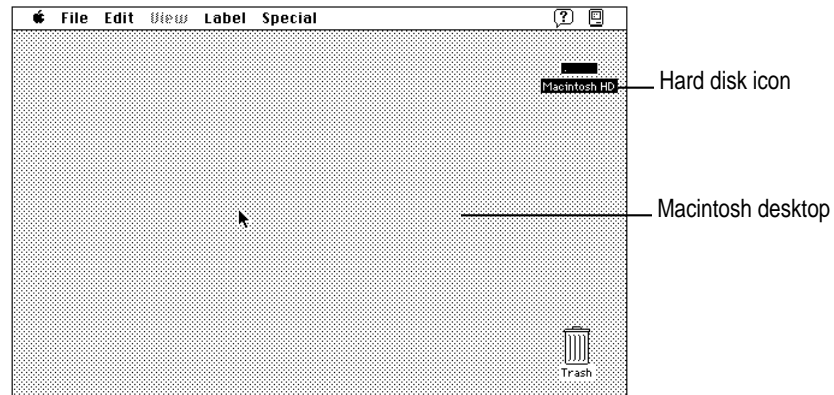
2 Turn on your computer by pressing the Power On key.

You'll find the Power On key at the top of the keyboard. You can recognize this key by the triangle outline on it.



3 Check to see what's on your screen.

- If you see the Macintosh desktop, shown here, your system software is already set up correctly. Skip now to “What's Next?”



- If you see a blinking question mark, you need to install system software on the computer's hard disk. (System software is a set of programs the computer uses to start itself up.)




See “Reinstalling System Software” in Chapter 10 of this book for information on installing system software.

- If you see anything else on your screen, or if you see nothing at all, see the next section, “Problems Turning on Your Computer?”

IMPORTANT If you need to turn off your computer at any point, please see “Turning the Computer Off” at the end of Chapter 3. It is very important to use the correct procedure for shutting down your Macintosh before turning it off.

Problems turning on your computer?

If you don't see anything on the screen, check these items to see if you can identify the problem.

- Is the computer plugged into a power source? If it is plugged into a power strip, is the power strip turned on?
- Is the computer turned on? The power-on light on the front panel should be on.
- Are the keyboard and mouse cables connected correctly? (Don't disconnect the keyboard or mouse cables while your computer is on. You could damage your equipment.)
- Is the monitor power cord plugged in?
- Is the monitor turned on? (Check the power-on light on the front of the monitor.)
- Is the monitor's cable attached firmly to both the monitor and computer?
- Is the brightness control on the monitor adjusted correctly? (On Apple monitors, the brightness control is marked with the symbol )

What's next?

You've completed setting up your computer. Next, be sure to read Chapter 2, "Safety and Health Information," which contains important tips on working safely and comfortably with your computer.

Then continue with one of the following steps:

- If you are new to the Macintosh, turn to Chapter 3, "Learning to Use Your Computer."
- If you are an experienced Macintosh user, turn to Part II, "More About Your Macintosh."
- If you want to install application software on your computer, refer to Chapter 6 of this book and to the *Macintosh Reference* for information on setting up your programs and managing memory. You'll need this information to properly set up any software programs specifically designed for Power Macintosh computers.

If you have questions about your computer that are not covered in this book, consult the *Macintosh Reference*.

Read this section to learn how to
use your computer safely
and comfortably

2

Safety and Health Information



Safety instructions

For your own safety and that of your equipment, always take the following precautions.

Turn off the computer completely and disconnect the power plug (by pulling the plug, not the cord) if any of the following conditions exists:

- The power cord or plug becomes frayed or otherwise damaged.
- You spill something into the case.
- Your Macintosh is exposed to rain or any other excess moisture.
- Your Macintosh has been dropped or the case has otherwise been damaged.
- You suspect that your Macintosh needs service or repair.
- You want to clean the case (use only the recommended procedure described below).

For additional safety:

- If you ever need to remove the cover of your computer, replace it before you use the computer.
- Never turn on your computer with any of the internal parts removed.
- Never turn on your computer with any parts of the external closure removed.

Be sure that you always do the following:

- Keep your Macintosh away from sources of liquids, such as wash basins, bathtubs, shower stalls, and so on.
- Protect your Macintosh from dampness or wet weather, such as rain, snow, and so on.
- Read all the installation instructions carefully before you plug your Macintosh into a wall socket.
- Keep these instructions handy for reference by you and others.
- Follow all instructions and warnings dealing with your system.

WARNING Electrical equipment may be hazardous if misused. Operation of this product, or similar products, must always be supervised by an adult. Do not allow children access to the interior of any electrical product and do not permit them to handle any cables.

To clean the case, do the following:

- 1 Turn off the computer and then disconnect the power plug. (Pull the plug, not the cord.)**
- 2 Wipe the surfaces lightly with a clean, soft cloth dampened with water.**

WARNING If you have a problem with your computer and nothing in the manuals that came with the computer solves the problem, consult the service and support information that came with your computer for information on how to contact an Apple-authorized service provider or Apple for assistance.

Health-related information about computer use

Muscle soreness, eye fatigue, and other discomforts and injuries sometimes associated with using computers can occur from performing any number of activities. In fact, misuse of the same muscles during multiple activities can create a problem that might not otherwise exist. For example, if you engage in nonwork activities that involve repetitive stress on the wrist—such as bicycling—and also use your computer keyboard improperly, you may increase your likelihood of developing wrist problems. Some individuals are at greater risk of developing these problems because of their health, physiology, lifestyle, and general exposure to stress. Work organization and conditions, such as workstation setup and lighting, also play a part in your overall health and comfort. Preventing health problems is a multifaceted task that requires careful attention to the way you use your body every hour of every day.

The most common health effects associated with using a computer are musculoskeletal discomfort and eye fatigue. We'll discuss each area of concern below. For information about electric and magnetic emissions, look in the reference material that came with your computer.

Musculoskeletal discomfort

As with any activity that involves sitting for long periods of time, using a computer can make your muscles sore and stiff. To minimize these effects, set up your work environment carefully, using the guidelines that follow, and take frequent breaks to rest tired muscles. To make working with your computer more comfortable, allow enough space in your work area so that you can change position frequently and maintain a relaxed posture.

Another type of musculoskeletal concern is repetitive stress injuries (RSIs), also known as cumulative trauma disorders (CTDs). These problems can occur when a certain muscle or tendon is repeatedly overused and forced into an unnatural position. The exact causes of RSIs are not totally understood, but in addition to awkward posture, such factors as the amount of repetition, the force used in the activity, the individual's physiology, workplace stress level, and lifestyle may affect the likelihood of experiencing an RSI.

RSIs did not suddenly arise when computers were invented; tennis elbow and writer's cramp, for example, are two RSIs that have been with us for a long time. Although less common than other RSIs, one serious RSI discussed more often today is a wrist problem called carpal tunnel syndrome, which may be aggravated by improper use of computer keyboards. This nerve disorder results from excessive pressure on the median nerve as it passes through the wrist to the hand.

This section offers advice on setting up your work area to enhance your comfort while you use your computer. Since the effects of repetitive movements associated with using a computer can be compounded by those of other work and leisure activities to produce or aggravate physical problems, proper use of your computer system must be considered as just one element of a healthy lifestyle.

No one, of course, can guarantee that you won't have problems even when you follow the most expert advice on using computer equipment. You should always check with a qualified health specialist if muscle, joint, or eye problems occur.

Eye fatigue

Eye fatigue can occur whenever the eyes are focused on a nearby object for a long time. This problem occurs because the eye muscles must work harder to view an object that's closer than about 20 feet (6 meters). Improper lighting can hasten the development of eye fatigue. Although eye fatigue is annoying, there's no evidence that it leads to permanent damage.

Whenever you're engaged in an activity that involves close-up work—such as reading a magazine, doing craft work, or using a computer—be sure to have sufficient glare-free lighting and give your eyes frequent rest breaks by looking up and focusing on distant objects. Remember to have your eyes examined regularly.

To prevent discomfort and eye fatigue:

- Arrange your work space so that the furniture is properly adjusted for you and doesn't contribute to an awkward working posture.
- Take frequent short breaks to give your muscles and eyes a chance to rest.

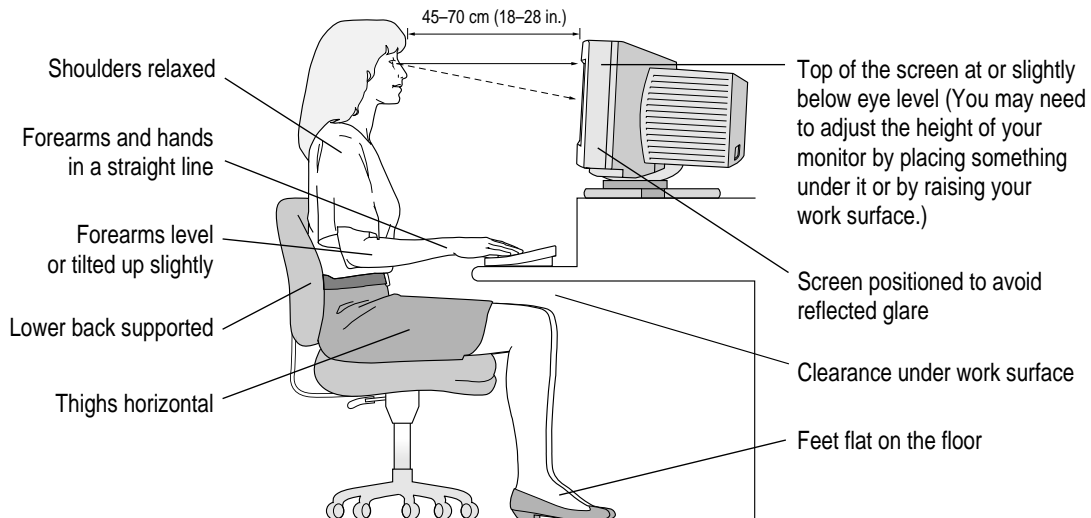
Arranging your office

Here are some guidelines for adjusting the furniture in your office to accommodate your physical size and shape.

- An adjustable chair that provides firm, comfortable support is best. Adjust the height of the chair so your thighs are horizontal and your feet flat on the floor.

The back of the chair should support your lower back (lumbar region). Follow the manufacturer's instructions for adjusting the backrest to fit your body properly.

- When you use the computer keyboard, your shoulders should be relaxed. Your upper arm and forearm should form an approximate right angle, with your wrist and hand in roughly a straight line.



You may have to raise your chair so your forearms and hands are at the proper angle to the keyboard. If this makes it impossible to rest your feet flat on the floor, you can use a footrest with adjustable height and tilt to make up for any gap between the floor and your feet. Or you may lower the desktop to eliminate the need for a footrest. Another option is to use a desk with a keyboard tray that's lower than the regular work surface.

- Position the mouse at the same height as your keyboard. Allow adequate space to use the mouse comfortably.
- Arrange the monitor so the top of the screen is slightly below your eye level when you're sitting at the keyboard. The best distance from your eyes to the screen is up to you, although most people seem to prefer 18 to 28 inches (45 to 70 cm).
- Position the monitor to minimize glare and reflections on the screen from overhead lights and windows. You may want to use a tiltable monitor stand. The stand lets you set the monitor at the best angle for viewing, helping to reduce or eliminate glare from lighting sources you can't move.

Avoiding fatigue

- Change your seated position, stand up, or stretch whenever you start to feel tired. Frequent short breaks are helpful in reducing fatigue.
- Use a light touch when typing or using a mouse and keep your hands and fingers relaxed.
- Some computer users may develop discomfort in their hands, wrists, or arms after intensive work without breaks. If you begin to develop chronic pain or discomfort in your hands, wrists, or arms, consult a qualified health specialist.
- Allow adequate workspace so that you can use your keyboard and mouse comfortably. Place papers or other items so you can view them easily while using your computer. A document stand may make reading papers more comfortable.
- Eye muscles must work harder to focus on nearby objects. Occasionally focus your eyes on a distant object, and blink often while you work.
- Clean your screen regularly. Keeping the screen clean helps reduce unwanted reflections.

What's next?

You've completed setting up your computer. Continue with one of the following steps:

- If you are new to the Macintosh, continue with Chapter 3, “Learning to Use Your Computer.”
- If you are an experienced Macintosh user, turn to Part II, “More About Your Macintosh.”
- If you want to install application software on your computer, refer to Chapter 6 of this book and the *Macintosh Reference* for information on setting up your programs and managing memory. You'll need this information to properly set up any software programs specifically designed for Power Macintosh computers.

If you have questions that are not covered in this book, consult the *Macintosh Reference*.

Go through the exercises in this chapter to learn how to use your computer

3

Learning to Use Your Computer



Your computer comes with a tutorial that teaches you the basics. The tutorial is divided into two parts:

- **Part 1** You start the *Macintosh Basics* tour on your computer, which presents the basic skills you need to master.
- **Part 2** After you complete the Macintosh Basics tour, you return to this chapter to practice what you learned. You also learn some additional skills.

If you've never used a Macintosh computer before, you should complete both parts of the tutorial.

If you are an experienced Macintosh user, you may want to look over the rest of this book to learn about special features of this computer. Then, as you work with your Macintosh, consult the *Macintosh Reference* for answers to questions about the system software that came with your computer.

IMPORTANT If you need to turn off your computer at any point before finishing the tutorial, please see “Turning the Computer Off” at the end of this chapter.

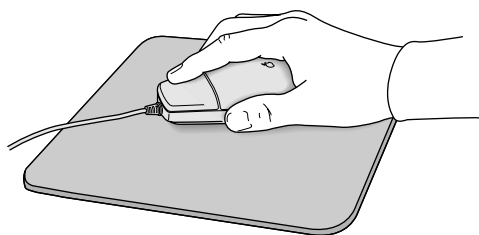
Part 1 Starting the *Macintosh Basics* tour

Your Macintosh Basics tour is on the hard disk that's inside your computer. To take the tour, follow these steps:

Make sure your computer is turned on. If the screen is dark, try adjusting the screen (see “Problems Turning On Your Computer?” in Chapter 1) until you see words and small pictures on your screen.

1 Use your hand to scoot the mouse along the table.

Hold the mouse as shown, cable pointing away from you. Slide it so that it stays in contact with the table. Don't press the mouse button. Watch the arrow on your screen to see if it moves when you move the mouse.

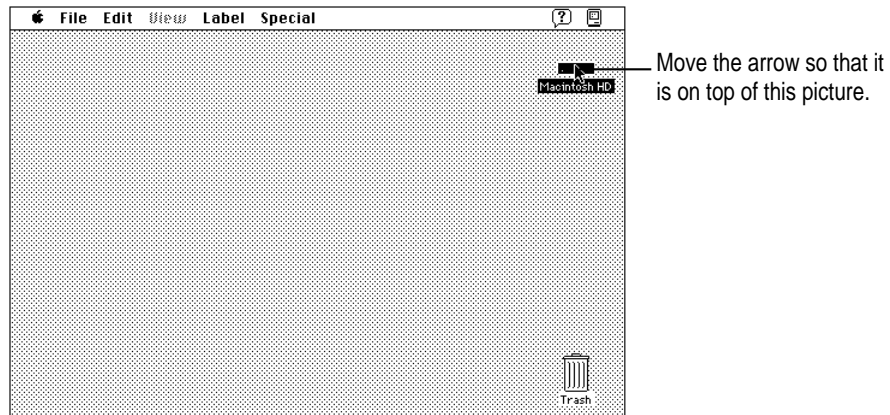


2 Notice that the arrow (␣) moves in the direction you move the mouse.

If the arrow doesn't move on the screen, make sure that the cable connecting the mouse to the keyboard is secure and that your mouse is positioned as shown in the picture. (Don't disconnect the cable while your computer is on; you could damage your equipment.)

3 Move the mouse so that the tip of the arrow (⏏) is on the picture labeled “Macintosh HD.”

Make sure the tip of the arrow is on the picture, not the words “Macintosh HD.”



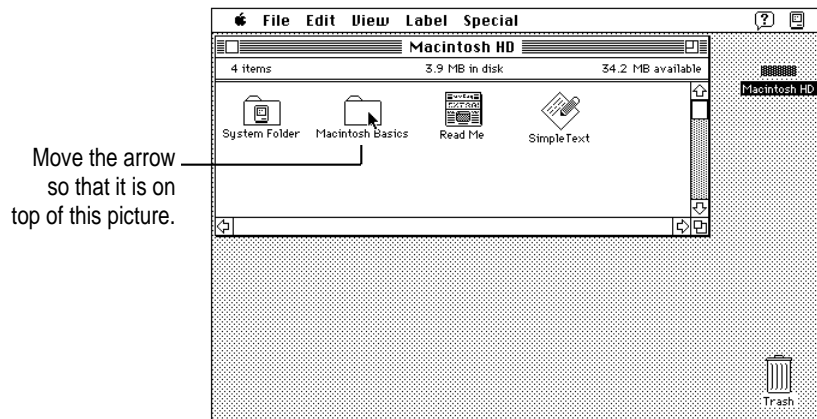
4 Being careful not to move the mouse, press the button twice in quick succession. (This is called “double-clicking.”)

Now your screen should look like the picture following step 5. The items in the illustration below may not exactly match those on your screen. The only item you need right now is the Macintosh Basics folder.

If the screen doesn’t look right, try steps 1 and 2 again, paying special attention to the following:

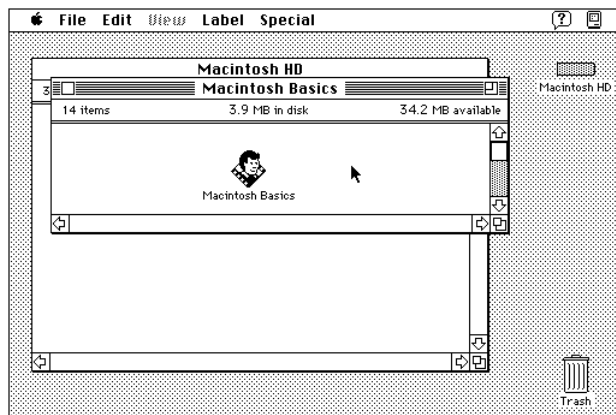
- Make sure the tip of the arrow is touching the picture, not the words beneath it.
- Be sure to press the mouse button twice.
- Press twice quickly and be careful not to move the mouse while you press.

- 5 Move the mouse to place the tip of the arrow (↔) on the picture of the folder labeled “Macintosh Basics.”

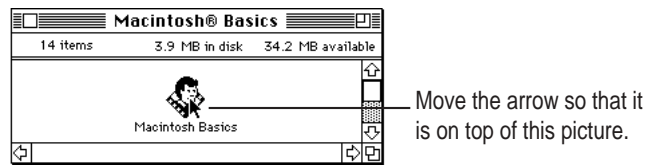


- 6 Being careful not to move the mouse, press the button twice in quick succession.

Now your screen should look like the following illustration:

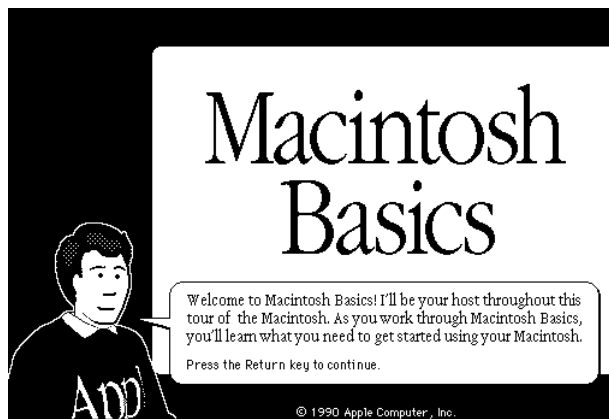


- 7** Move the mouse so that the arrow is on the picture of the man labeled “Macintosh Basics.”



- 8** Press the mouse button twice in quick succession.

Now your screen should look like the following picture:



If you don't see this screen, try again, paying special attention to the following:

- Make sure the tip of the arrow is touching the picture, not the words beneath it.
 - Be sure to press the mouse button twice.
 - Press twice quickly and be careful not to move the mouse while you press.
- 9** Follow the instructions on the screen and work through the tour.

When you finish the tour, continue with the rest of this chapter.

Part 2 Practicing your new skills

You should now have completed the *Macintosh Basics* tour.

The second part of your training gives you an opportunity to think about what you've learned so far and to practice your new skills.

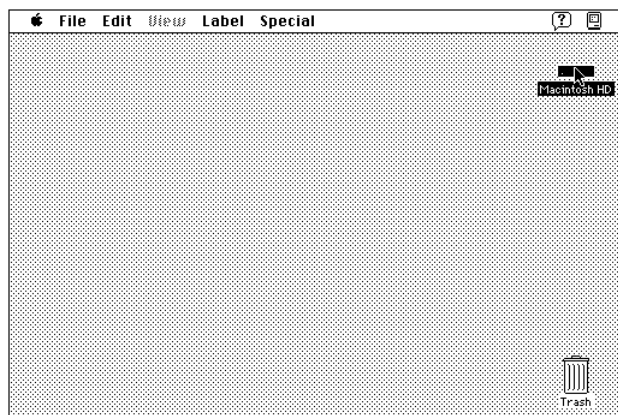
Reviewing what you've learned

Before continuing, take a few moments to answer these questions. They will help you summarize the information you learned in *Macintosh Basics*. You may want to write (or circle) your answers as appropriate. The correct answers are in the next section of this chapter.

If you have any trouble answering the questions, look in Chapter 4, “Basic Skills.”

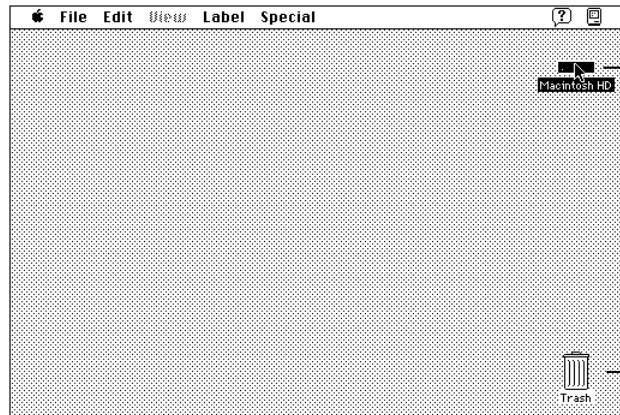
Question: *What is the name of the area where you do all your work? (It's shown below.)*

Answer: _____



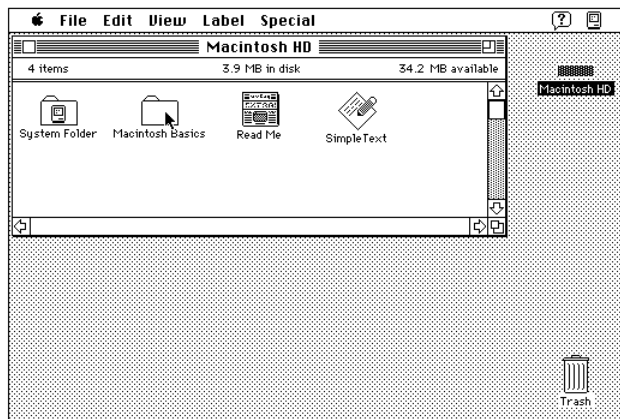
Question: What are pictures on the Macintosh desktop called? Two examples are shown below:

Answer: _____

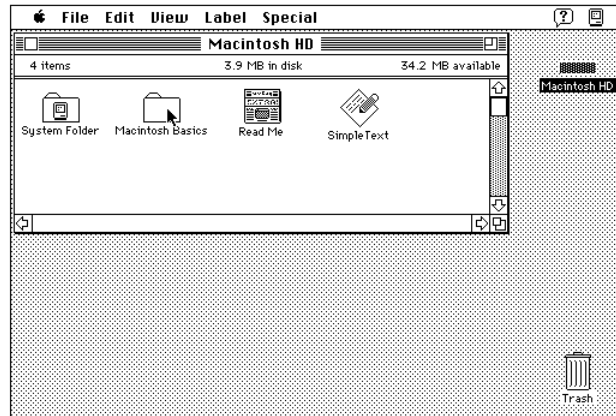


What is the name for these pictures on the Macintosh desktop?

Circle the hard disk window in the illustration below.

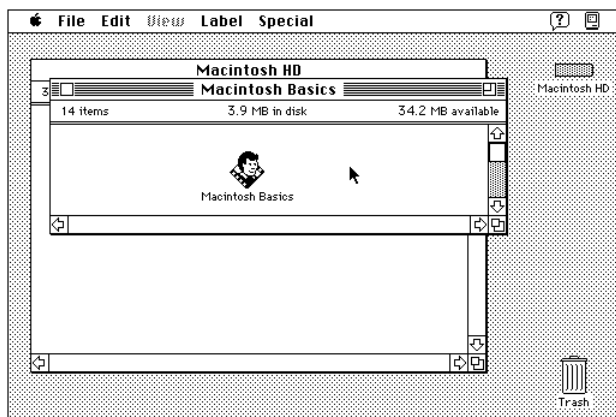


Circle the hard disk *icon* in the illustration below.



Question: Circle the active window on the desktop below. How do you make a window active?

Answer: _____



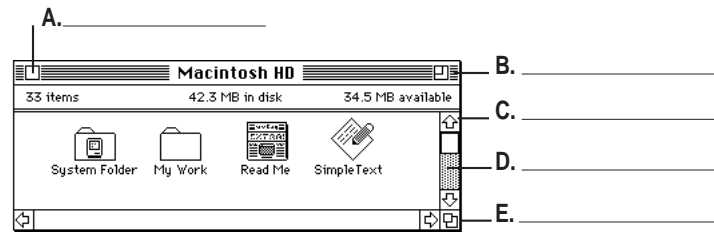
Question: Which menu is the Save command in?

Answer: _____

Question: How do you throw an item away?

Answer: _____

Label the parts of this window.



Answers to the review questions

These are the answers to the review questions that you completed earlier.

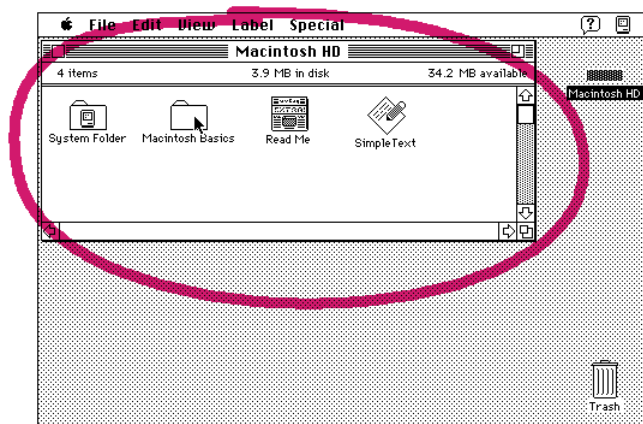
Question: *What is the area called where you do all your work? (It's shown below)*

Answer: *the desktop*

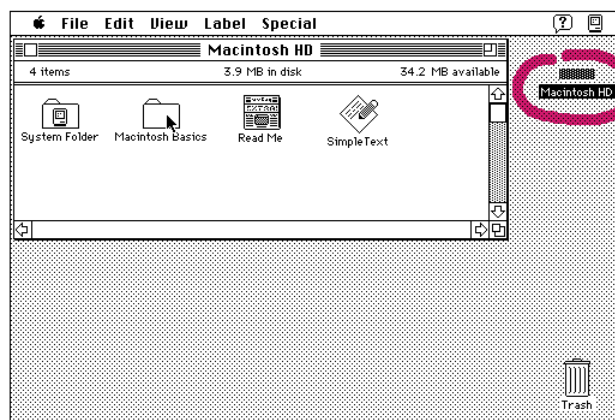
Question: *What are pictures called on the Macintosh desktop?*

Answer: *icons*

Circle the hard disk window in the illustration below.

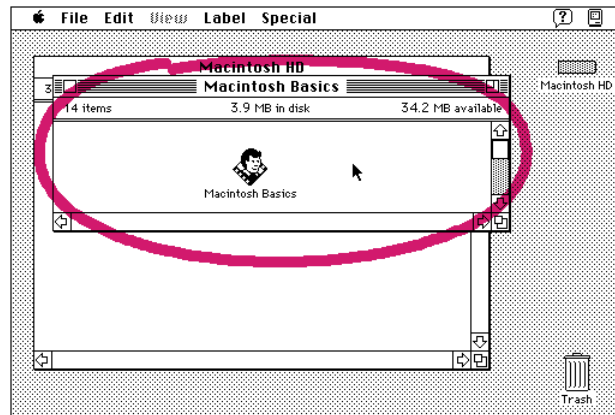


Circle the hard disk icon in the illustration below.



Question: Circle the active window shown on the desktop below. How do you make a window active?

Answer: by clicking anywhere inside of it



Question: Which menu is the Save command in?

Answer: the File menu

Question: How do you throw an item away?

Answer: by dragging it to the Trash

Label the parts of this window.

A. The close box



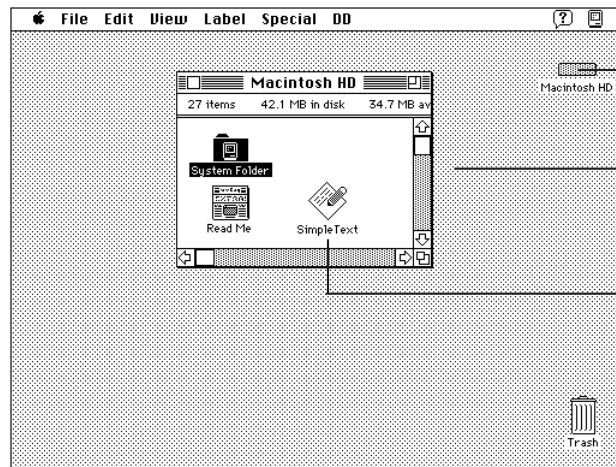
Practice session

Now you can practice what you learned in *Macintosh Basics*. You'll be practicing your skills using real programs that came with your computer, rather than the sample ones in *Macintosh Basics*.

IMPORTANT If you get lost at any point during the practice session, or if something unexpected happens, please turn to “Clues on Your Screen” in this chapter. These tips will help you get back on track.

1: Creating a new document

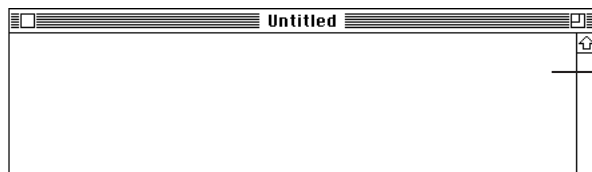
- 1 Open the hard disk icon and then open the SimpleText program, as shown below.



1 Double-click the hard disk icon to open it.

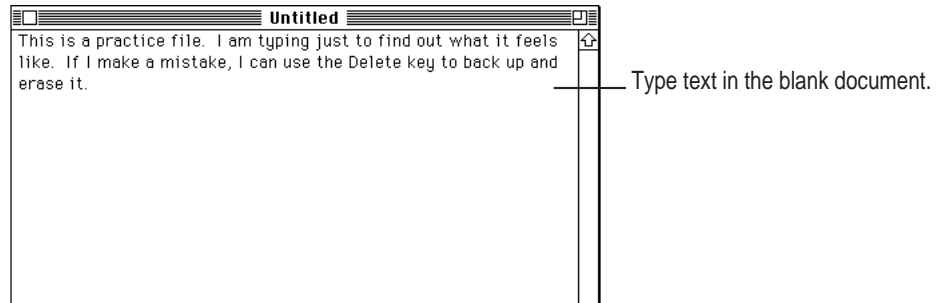
2 If a window with the name of your hard disk doesn't appear, click the disk icon again twice.

3 To open the SimpleText program, double-click the SimpleText icon.



When the SimpleText program opens, a window appears with "Untitled" in the title bar. This is your blank document.

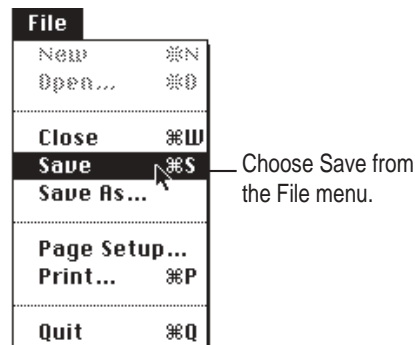
2 Use the keyboard to type a few lines of text into the blank document.



It doesn't matter what you type. If you make an error, press the Delete key to backspace over the incorrect letters, then retype them.

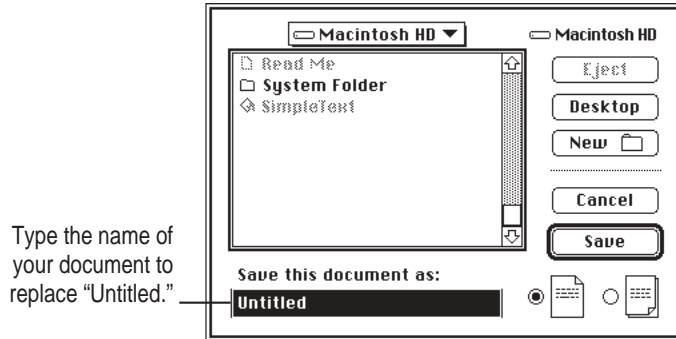
3 Open the File menu and choose the Save command to save your new document.

When you save a document, you are storing it on the hard disk. You need to save every document you create. If you don't save it, the document is lost when you turn off the computer.

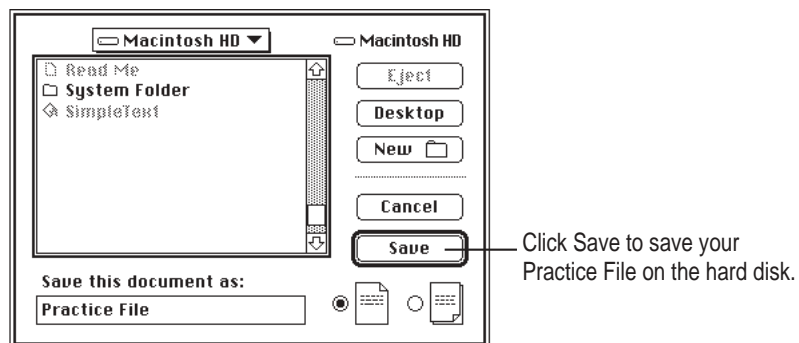


A box like the one in the next step appears, with the word "Untitled" near the bottom. This box lets you name and save your document.

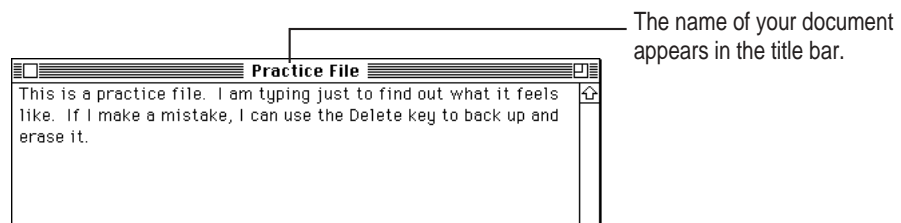
- 4 Don't click anywhere. Just type the name "Practice File." Then click the button labeled Save.



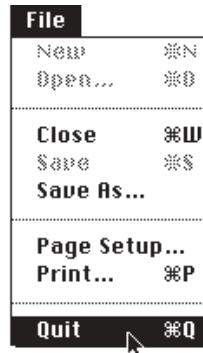
The name you type should replace the word "Untitled" in the box. If it doesn't, place the pointer to the left of the *U* in "Untitled," then press the mouse button and drag across the word. When "Untitled" is *highlighted* (the text is surrounded with a black box), type the new name.



After you click Save, a copy of your document is stored on the hard disk in your computer. The new name appears in the title bar of the document.



5 Open the File menu and choose Quit to quit the SimpleText program.

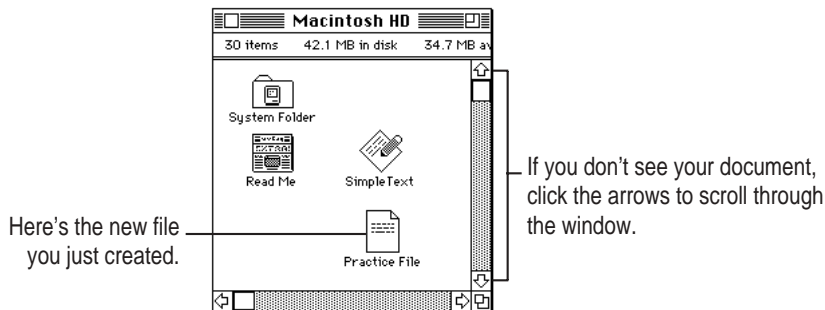


Choose Quit from the File menu to quit your program.

The SimpleText program closes, along with your document.

6 Check for the file you saved in the hard disk window.

You should see the icon for the document you saved in the hard disk window. If your Practice File icon doesn't appear, it may be in a hidden part of the window. You can scroll through the window to find the icon if you need to.



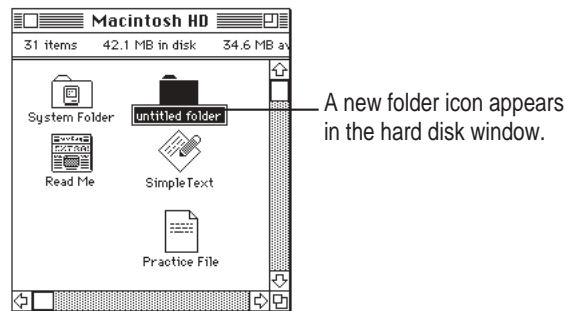
That's the end of the first exercise. You may want to take a break before you continue.

2: Storing your work inside a folder

You can organize your work on the Macintosh by creating folders and storing your documents inside of them.

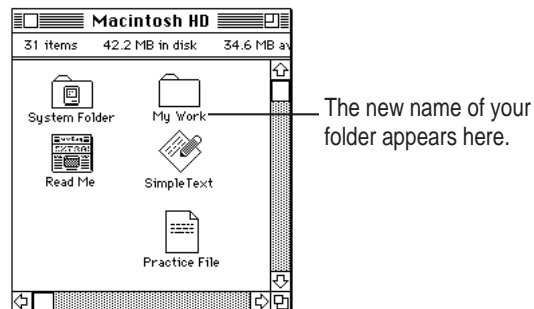
1 Open the File menu and choose New Folder.

A folder icon named “untitled folder” appears in the active window on the desktop.



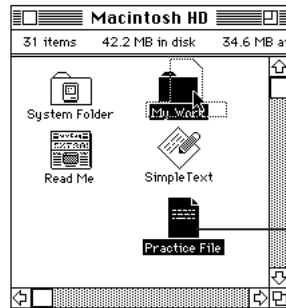
2 Without clicking anywhere, type “My Work” to name the folder.

Notice that the words “untitled folder” are highlighted and boxed. That means the name you type will replace these words.



3 Drag the Practice File into the folder named “My Work.”

Move the pointer to the Practice File. Then press and hold down the button while you move the Practice File to the folder named “My Work.” When the tip of the pointer is on the folder icon and the folder becomes highlighted, release the button.

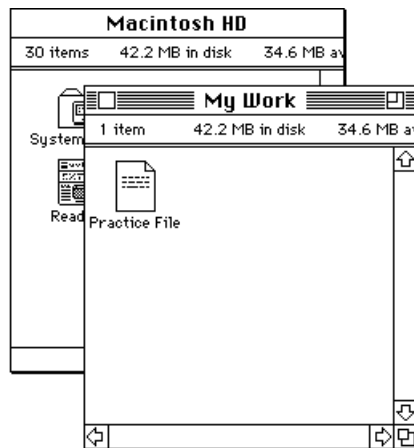


Move the pointer to this icon. Then press and hold down the button while you move this icon to the folder named “My Work.”

4 Open the folder named “My Work.”

You open a folder the same way you open any icon: double-click it, or click it and choose Open from the File menu.

The “My Work” folder window opens, and you can see your Practice File.



You have now completed the second practice session. You may want to take a break before continuing.

3: Throwing an item away

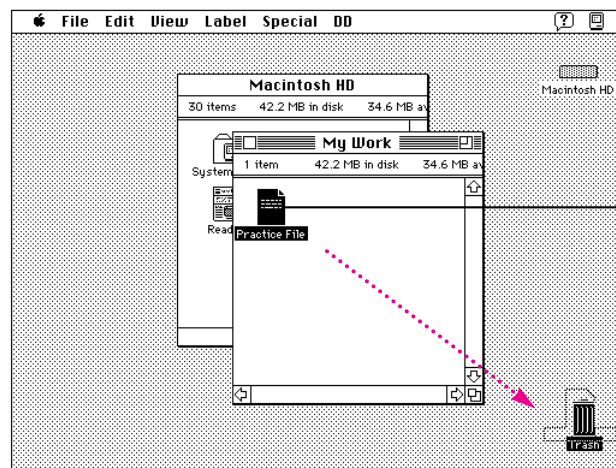
As you work, you will want to remove items you no longer need from the hard disk. You remove items by throwing them into the Trash. In this exercise, you will throw the Practice File into the Trash.

- 1 If the Macintosh HD window is not already open, open it by double-clicking the Macintosh HD icon.

- 2 If the folder named “My Work” is not already open, open it.

Note: If you can't see the Trash icon (which should be in the lower-right corner of your screen) move the windows so that the Trash icon is visible. To move a window, place the pointer in the window's title bar (the stripes at the top of the window), and drag the window.

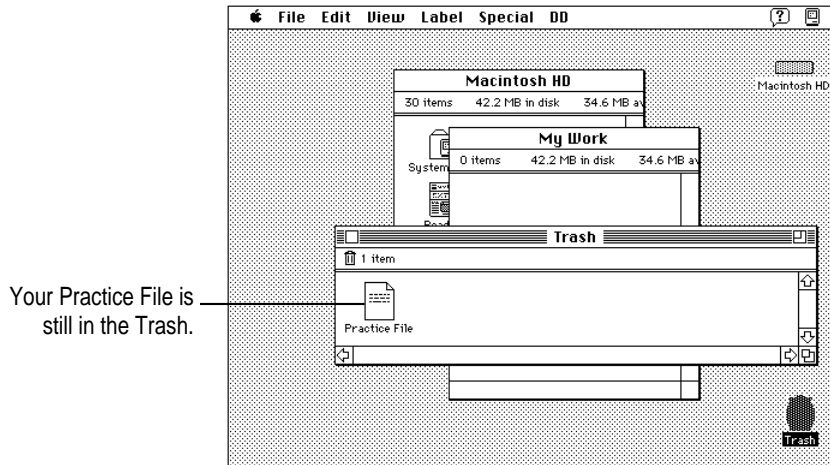
- 3 Drag the Practice File to the Trash icon.



Place the pointer on the Practice File icon. Press and hold down the button as you move the pointer to the Trash icon. When the tip of the pointer is on the Trash icon and the Trash icon becomes highlighted, release the button.

When you place an icon in the Trash, it is not immediately removed from your disk. The Trash icon bulges to show you that the Practice File is in the Trash, but still on your disk.

- 4 **Open the Trash icon (by double-clicking it) to see your Practice File there.**



- 5 **Open the Special menu and choose Empty Trash.**

A dialog box appears. The computer displays a dialog box when it asks you to confirm an action. You must click OK or another button in the dialog box before you can take any other action.

- 6 **Click OK.**

The Trash is emptied and the Trash icon returns to normal.

The Empty Trash command permanently removes from your disk anything that is in the Trash. Always be sure that you know what you're removing before you choose Empty Trash.

Note: You can get an item back from the Trash by moving its icon back to your disk before you choose Empty Trash from the Special menu. After you choose Empty Trash, you can't recover items you've thrown away.

You have completed all of the practice exercises. Before you continue with your own work, you might want to skim Chapter 4, "Basic Skills," for a summary of basic skills that you'll need as you work.

What's next?

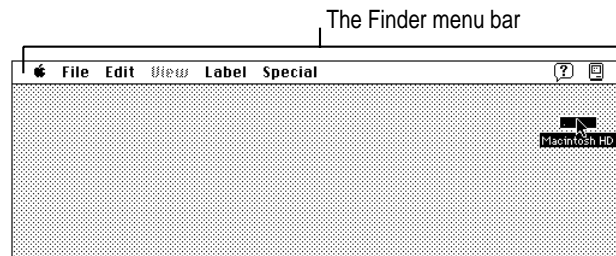
The best way to get experience working with your computer is to begin to do your own work. You may have already purchased application programs to work with. You'll need to install these on your hard disk. Be sure to read the manuals that came with your application programs for information on how to install them. (To install your programs, you'll need to know how to insert a floppy disk into your computer. See Chapter 4, "Basic Skills," for instructions.)

Clues on your screen

As you work, check the screen frequently for these important clues about where you are. If you are lost or if something unexpected happens, ask yourself these questions:

Is this the right program?

Check the menu bar. If it looks like this example, you are in the Finder. If any of these menu names are different or missing, you are inside another program. To get back to the Finder, click anywhere on the desktop pattern.



Is the icon or text you want to work with selected?

Commands you choose in menus usually work only if an icon or some text is selected. Check the item you want to work with to make sure it's highlighted (which means it's selected).

Is it best to start over?

If you get stuck or lost as you practice on the computer, try one or more of the following remedies and then start the practice session over again:

- If an unwanted or confusing window is on your screen, click the Close box in the upper-left corner of the window to close it.
- If an unwanted window or box contains a Cancel button, click it.
- If the File menu contains the word Quit, choose it.
- If you're really stuck, restart your computer.

To restart, click the desktop (the background pattern on your screen), and then choose Restart from the Special menu. This turns the computer off and then back on. When you restart a computer, problems often clear up.

Turning the computer off

If you plan to continue learning about your Macintosh or if you plan to continue working, don't turn off your computer yet. When you are ready to stop working, follow the steps on the next page.

1 Use the mouse to choose the Shut Down command from the Special menu.

Choosing Shut Down readies the hard disk for a fast restart next time you turn on the computer. It also prompts you to save any unsaved work on a disk before turning the power off.



To turn on the computer again, just press the Power On key on the keyboard.

WARNING Do not turn the computer off by pressing the power switch on the back panel. If you do so, you will lose any work you haven't previously saved onto a disk. You also risk losing open documents.

IMPORTANT Be sure to shut down the computer if you need to do any of the following:

- Move the computer
- Attach other equipment to the computer
- Unplug the computer
- Leave the computer for an extended period of time

Refer to this chapter for information
on basic Macintosh skills

4

Basic Skills

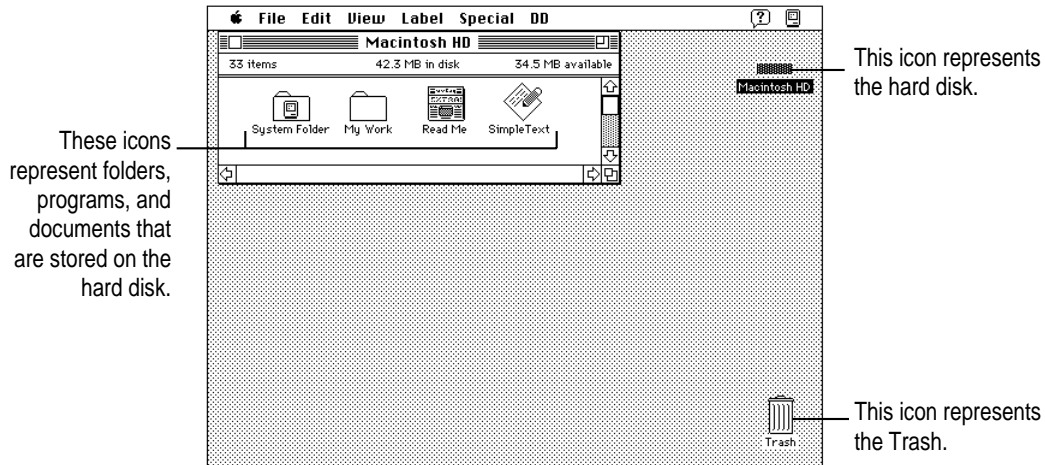


This section provides information on the following basic skills:

- Working with icons
- Working with windows
- Working with documents
- Working with disks
- Organizing your desktop
- Working with menus
- Keyboard shortcuts in the Finder and in directory dialog boxes

Working with icons

An icon is a picture that represents something else.



Selecting icons

To do this	Follow these steps
Select the icon	Click the item.
Deselect an icon	Click anywhere except the selected icon.
Select multiple icons	While holding down the Shift key, click each icon.
Deselect an icon in a group of selected icons	While holding down the Shift key, click the icon.
Select multiple icons that are near each other	<ol style="list-style-type: none">1. Place the pointer at one corner of the group of icons.2. Drag diagonally to select the icons, then release the button.
Select a list or partial list of icons	<ol style="list-style-type: none">1. Place the pointer to the left of the top icon or the bottom icon.2. Drag up or down the list, releasing the button when the items are selected.

Copying icons

To do this	Follow these steps
Copy an icon onto another disk	Drag the icon to the icon of the other disk or to an icon or window that belongs to that disk.
Copy an icon on the same disk	<ol style="list-style-type: none">1. Click the icon to select it.2. Choose Duplicate from the File menu, or press ⌘-D.3. If you wish, rename the new icon and drag it to a new location. You can also make a copy by holding down the Option key while you drag the icon to another folder or window.

Opening icons

To do this	Follow these steps
Open an icon (disk, folder, etc.)	<ol style="list-style-type: none">1. Click the icon.2. Choose the Open command from the File menu. Or double-click (click twice quickly) on the icon.

Moving icons

To do this	Follow these steps
Move an icon on a disk	Drag the item to the location you want.

Naming icons

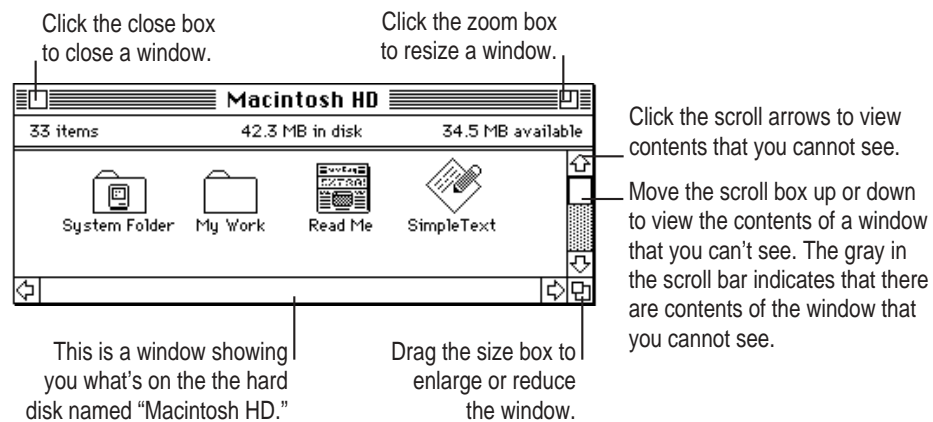
To do this	Follow these steps
Select text in an icon's name	Click the icon name (not the icon itself).
Rename an icon	<ol style="list-style-type: none">1. Select the text under the icon.2. Type the new name.3. Press the Return key.

Removing items from the disk and retrieving them from the Trash

To do this	Follow these steps
Erase or remove an item from a disk	<ol style="list-style-type: none">1. Drag the icon to the Trash.2. Choose Empty Trash from the Special menu.
Retrieve an item from the Trash	<ol style="list-style-type: none">1. Open the Trash icon.2. Drag the icon out of the Trash (and into the disk or folder window where you want to store it). Or, choose Put Away from the File menu to return the icon to its original place on a disk.

Working with windows

A window opens when you double-click an icon. A window usually shows you what's inside an icon.



Viewing the contents of a window

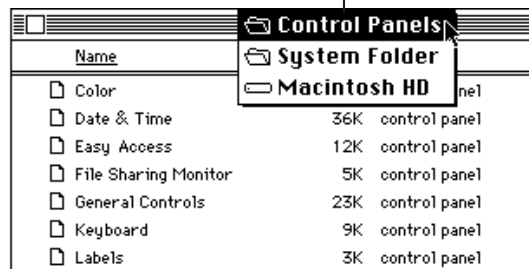
To do this	Follow these steps
View the contents of a window by name, date, size, or kind	<ol style="list-style-type: none">1. Open the View menu.2. Choose the menu item that corresponds to the way you want to view the contents of the window.
View the contents of the window in outline form	<ol style="list-style-type: none">1. Choose any list view from the View menu (any view except the icon and small icon views).2. Click the triangle next to a folder name to display or hide the contents of the folder.

Making a window active

To do this	Follow these steps
Make a window active	Click anywhere inside the window or double-click its icon.

Opening higher level folders or disks

- 1 Hold down the ⌘ key as you press the title of the active window.
- 2 Drag to choose a higher-level folder (or disk) and then release the button.



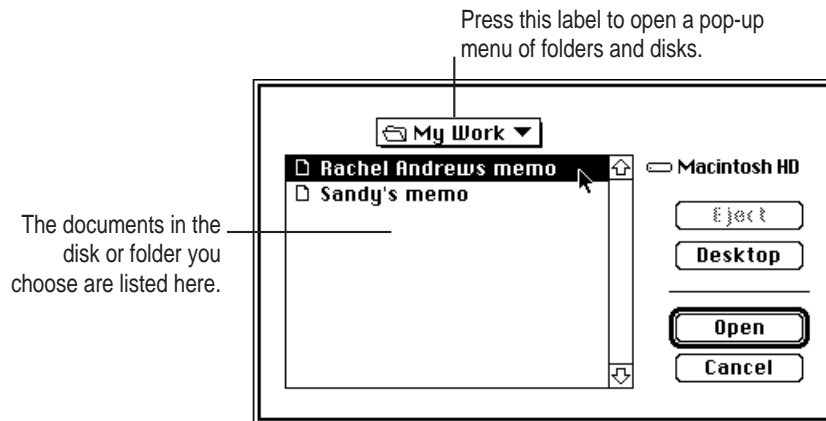
Working with documents

Opening and closing a document

To do this	Follow these steps
Open a document	<ol style="list-style-type: none">1. Click the icon for the document.2. Choose the Open command from the File menu. Or double-click (click twice rapidly) on the icon.
Close a document	Choose Close from the File menu. Or click the close box of the document window.

Opening a document from within a program

To do this	Follow these steps
Open a document when you are working in an open program	<ol style="list-style-type: none">1. Choose Open from the File menu.2. Click the name of the document. (The illustration shows how to find a folder that you might not see.)3. Click the Open button.

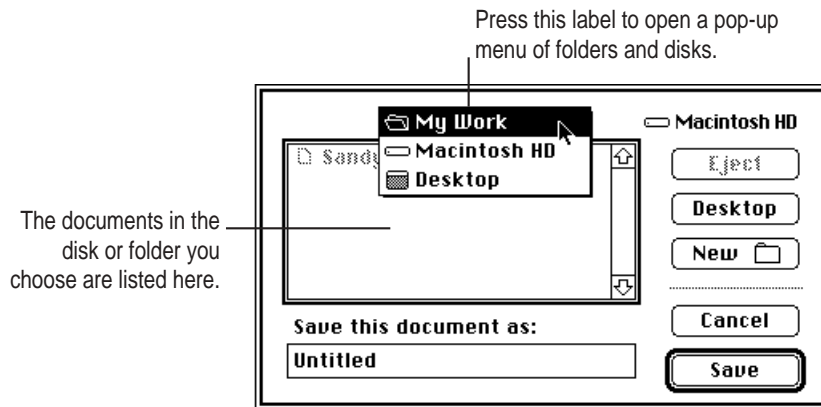


Saving and naming documents

To do this	Follow these steps
Save and name a document for the first time	<ol style="list-style-type: none">1. Choose the Save command from the File menu.2. Type a name for the document.3. Click the Save button.
Save the document under another name (Save as)	<ol style="list-style-type: none">1. Choose the Save As command from the File menu.2. Type a new name for the document.3. Click the Save button.

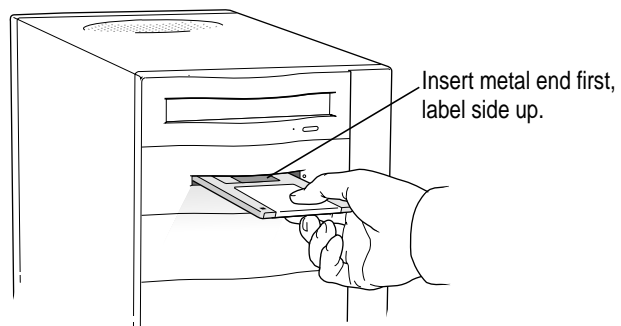
Choosing a folder when saving a document

To do this	Follow these steps
Save a document while working in a program	<ol style="list-style-type: none">1. Choose Save or Save As from the File menu.2. Click the name of the folder you want to save your document in. (The illustration shows how to find a folder that you might not see.)3. Click Open to open the folder.4. Name your document.5. Click the Save button to save the document inside the folder.



Working with disks

Inserting a floppy disk



Preparing a new floppy disk for use

See “Using Disks” in the *Macintosh Reference* manual.

Ejecting a floppy disk

To do this	Follow these steps
Eject a floppy disk	Drag the disk's icon to the Trash.

Copying the contents of a disk

To do this	Follow these steps
Copy the entire contents of one floppy disk onto another floppy disk (with one disk drive)	<ol style="list-style-type: none">1. Insert the original floppy disk into the floppy disk drive.2. Drag the floppy disk icon to the hard disk icon. (The floppy disk contents appear in a folder on the hard disk.)3. Drag the floppy disk icon to the Trash.4. Insert the floppy disk that you want to copy to.5. Drag the icon of the newly created folder to the floppy disk icon.6. Drag the floppy disk icon to the Trash.
Copy the entire contents of one floppy disk onto another floppy disk (with two disk drives)	<ol style="list-style-type: none">1. Insert both floppy disks into the disk drives.2. Drag the icon for the source disk (the disk you are copying from) to the icon for the destination disk (the disk you are copying to).
Copy an entire floppy disk onto a hard disk	<ol style="list-style-type: none">1. Drag the icon for the floppy disk to the icon for the hard disk. (The floppy disk contents appear in a folder on the hard disk.)
Copy items from a hard disk onto a floppy disk	<ol style="list-style-type: none">1. Select the items you want to copy.2. Drag the selected icons to the floppy disk's icon or window.
Copy items from a floppy disk onto a hard disk	<ol style="list-style-type: none">1. Select the items you want to copy.2. Drag the selected icons to the hard disk's icon or window.

Erasing the contents of a disk

To do this	Follow these steps
Erase the entire contents of a floppy disk	<ol style="list-style-type: none">1. Insert the disk you want to erase into a disk drive.2. Click the icon of the disk you want to erase.3. Choose Erase Disk from the Special menu.4. Respond to the messages on your screen by clicking the appropriate buttons.

Organizing your desktop

Creating a new folder

To do this	Follow these steps
Create a new folder	<ol style="list-style-type: none">1. Choose New Folder from the File menu.2. Type a name for the folder.3. Press the Return key.

Placing an icon inside a folder

To do this	Follow these steps
Place an icon inside a folder	<ol style="list-style-type: none">1. Drag the icon to the folder where you want to store it.2. Release the button when the folder icon becomes highlighted.



Working with pull-down menus

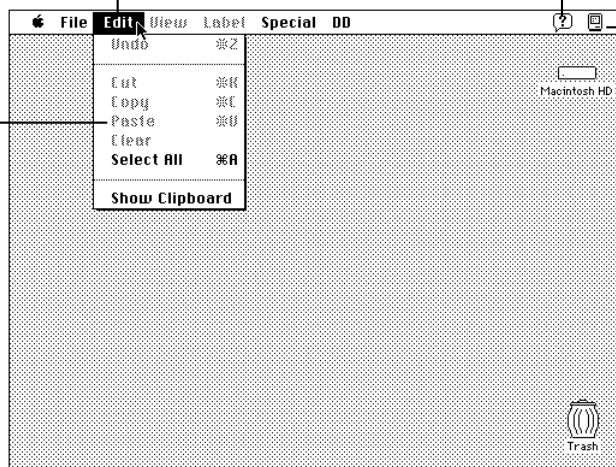
To choose an item from a menu:

- 1 Point to the menu.
- 2 Press to pull down the menu.
- 3 Drag to the item you want to choose.
- 4 Release the button when the command is highlighted.

This is the Help menu, which you use to display information about items on the screen.

Dimmed commands are not available.

This is the Application menu, which you use to see which programs are open.



Keyboard shortcuts in the Finder and in directory dialog boxes

Key	Action
Up, Down, Left, or Right Arrow key	Selects the next item in the direction of the arrow
Tab key key (a, b, c...)	Selects the next item alphabetically (except in a directory dialog box and the Chooser)
Character	Selects the first item whose name begins with that character (or the character following closest to it in the alphabet)
⌘–Down Arrow	Opens the selected icon
⌘–Option–Down Arrow	Opens the selected icon and closes the current folder
⌘–Up Arrow	Opens the folder that contains the current folder
⌘–Option–Up Arrow	Opens the folder that contains the current folder and closes the current folder
Return or Enter	In a dialog box: the same as clicking the button with the bold outline In the Finder: selects the selected icon's name for editing or saves the edited name



More About Your Macintosh

Chapter 5 Expanding Your Computer and Connecting Other Equipment

Chapter 6 Using Software With Your Power Macintosh

Chapter 7 Using Stereo Audio

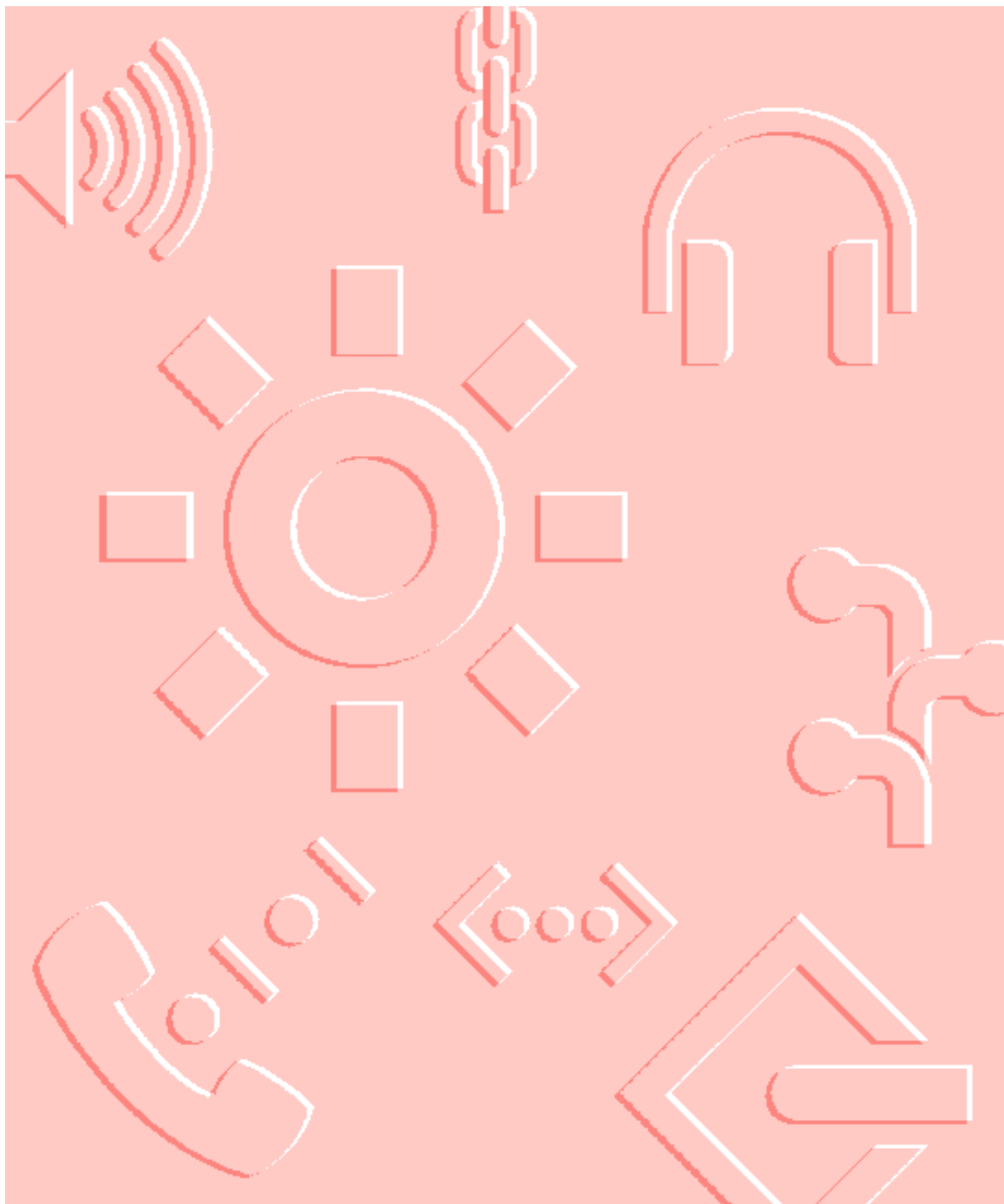
Chapter 8 Using Video With Your Power Macintosh 8100/80AV

Part II contains information you'll need after you've set up your computer and learned Macintosh basics:

- Installing an expansion card or additional memory, and connecting other equipment
- Using Power Macintosh software programs, which have special memory requirements
- Using your computer's stereo audio capabilities
- Using video on an AV-equipped Power Macintosh

Before you follow the instructions in this section, you should have set up your computer as described in Part I of this book and (if you are new to the Macintosh) have gone through the learning materials in Chapter 3.

II *part*



Read this chapter for information on adding a NuBus card or connecting other equipment to your computer

5

Expanding Your Computer and Connecting Other Equipment



Installing an expansion card

You can install printed circuit boards (called *cards*) for video and graphics applications, networking and communications, additional processing power, or other purposes. The cards fit into connectors, called *expansion slots*, inside the computer.

Your Macintosh has three expansion slots, each designed to accept a NuBus™ card.

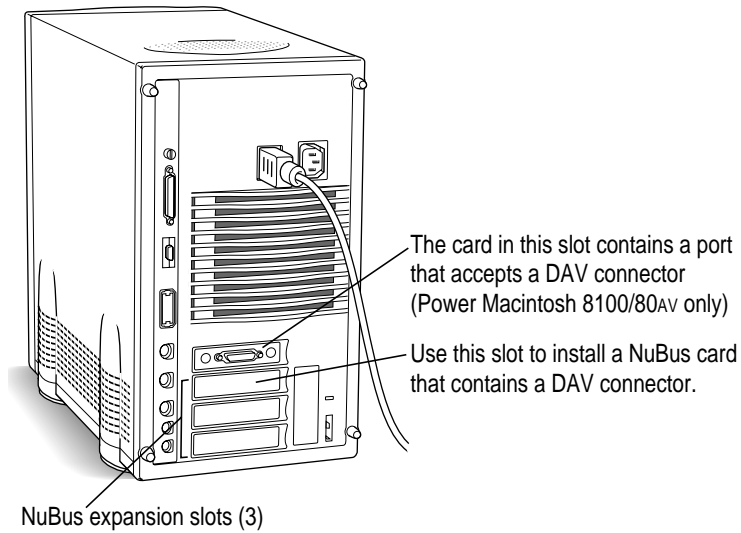
WARNING Be sure to use the Macintosh NuBus Adapter designed specifically for your model of the computer. Failure to do so could damage the card and your computer.

WARNING Do not remove any factory-installed cards from inside your computer. Pulling a factory-installed card out at an angle can damage your equipment. Any NuBus expansion card you install will not operate properly if the factory-installed card has been removed. If a factory-installed card needs to be removed, see an Apple-authorized service provider.

Installing a card with a DAV connector in your Power Macintosh 8100/80Av

If you have a Power Macintosh with built-in AV capabilities, you can install a NuBus card that contains a Digital Audio and Video (DAV) connector. This connector provides direct access to the specialized digital video and audio hardware built into your computer.

The illustration below shows the location of the expansion slots in your computer. If you wish to install a NuBus card that contains a DAV connector, you must use the indicated expansion slot (the one nearest the center of the computer's case).



NuBus power requirements

The combined power consumption of NuBus cards must not exceed the limits specified for your Macintosh model. If you have more than one NuBus card installed, check the information that came with your cards to make sure that their power consumption is within the limits specified in the *Technical Information* booklet.

Installing a NuBus card

IMPORTANT Some cards may need to be installed by an Apple-authorized service provider. Check the information that came with the card.

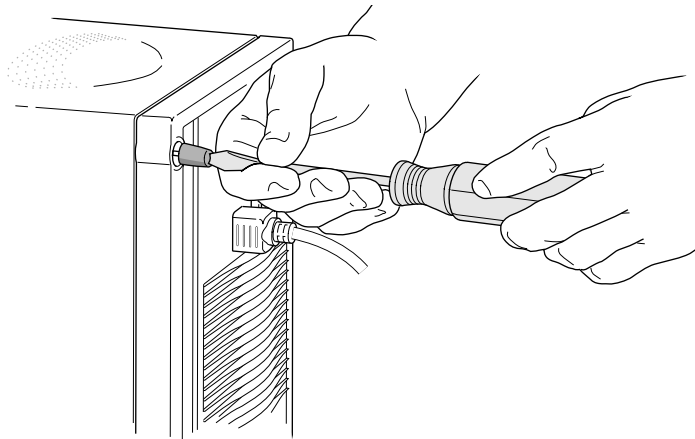
Follow these steps to install a NuBus expansion card or a DAV card.

- 1 Turn off the computer.

Make sure the computer is plugged in and turned off.

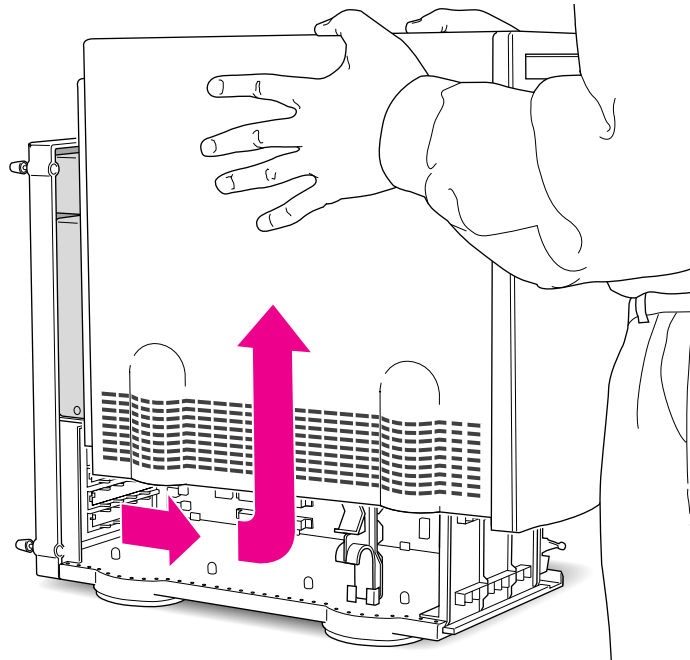
- 2 Loosen the four large screws at the corners of the back panel.

Do not remove the screws or the back panel.



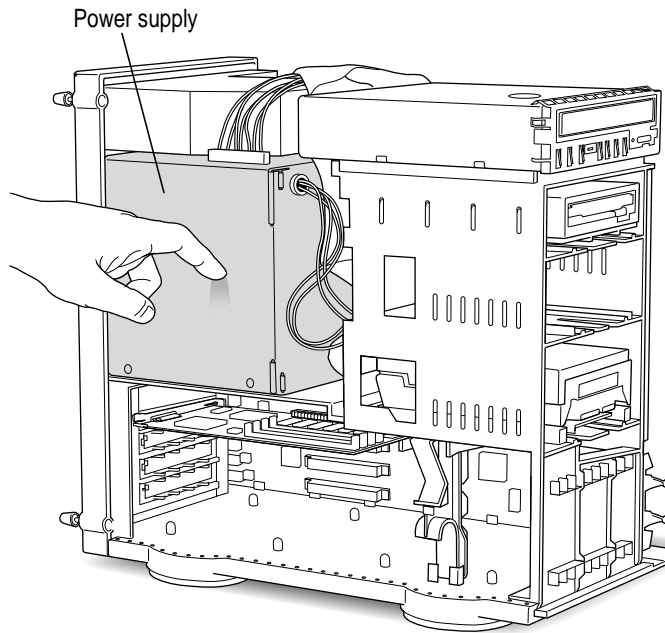
3 Remove the cover from the computer.

Slide the cover away from the back panel an inch or two. Then raise the cover straight up and off the computer.



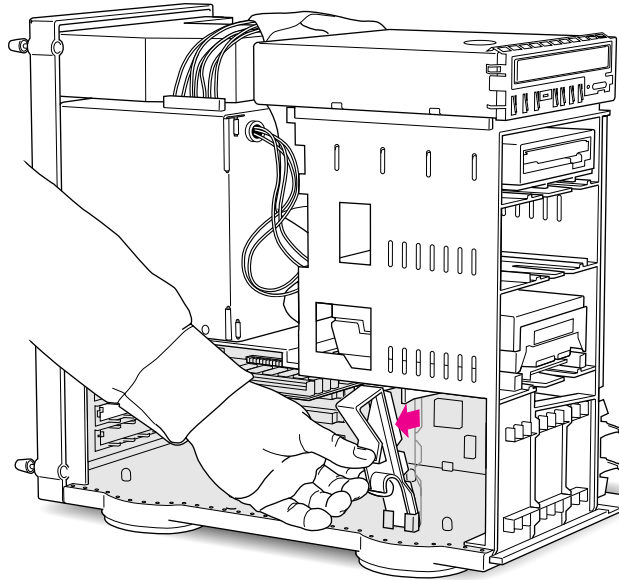
- 4 **Touch the metal part of the power supply case inside the computer to discharge static electricity.**

Always do this before you touch any parts or install components inside the computer.

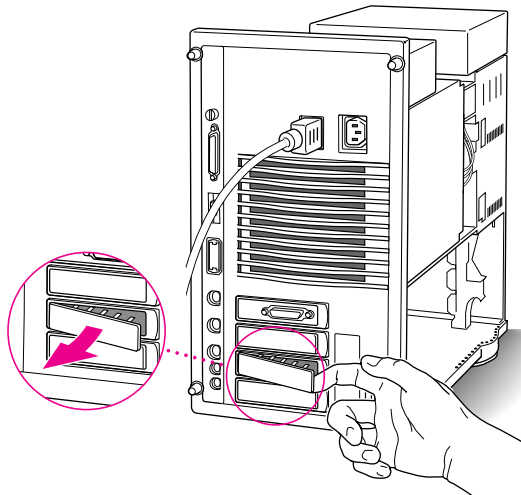


5 Remove the expansion card clip.

Grasp the clip handles with your thumb and forefinger and squeeze. Pull the clip straight out.

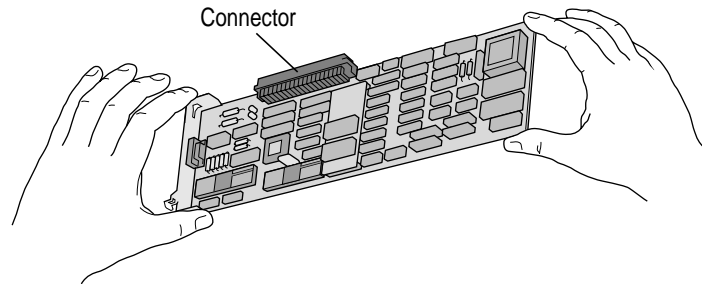


6 Pull out the plastic cover plate behind the expansion slot you want to use, and set the cover plate aside.

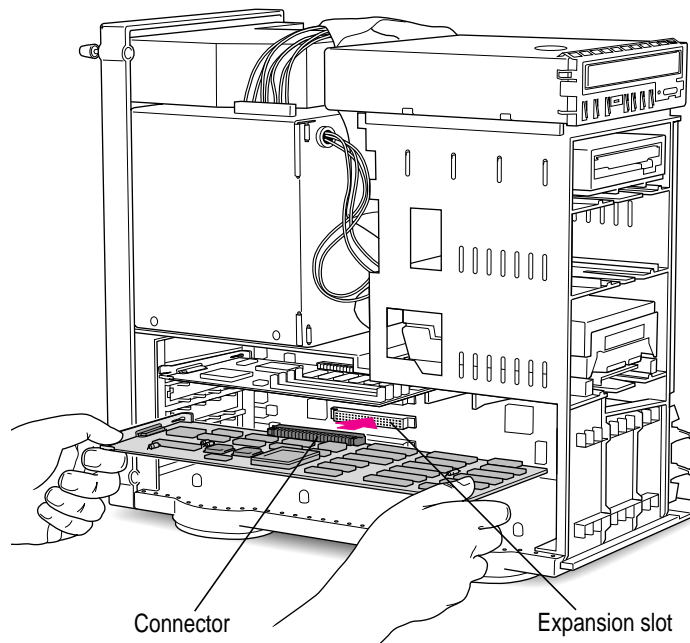


7 Remove the card from its static-proof bag.

Hold the card by its top edge to avoid touching the connector on the bottom of the card.



8 Align the connector end of the card with the expansion slot.



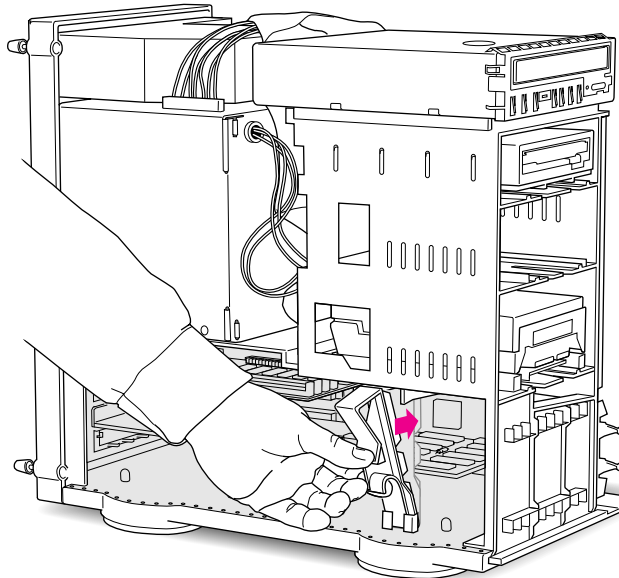
9 Press the card firmly until the connector is seated.

- Don't force the card. If you meet a lot of resistance, pull it out and try again.
- To see if the card is properly connected, wiggle it gently. If it resists and stays in place, it's connected.

If you have other cards to install, put them in now by repeating steps 6 through 9.

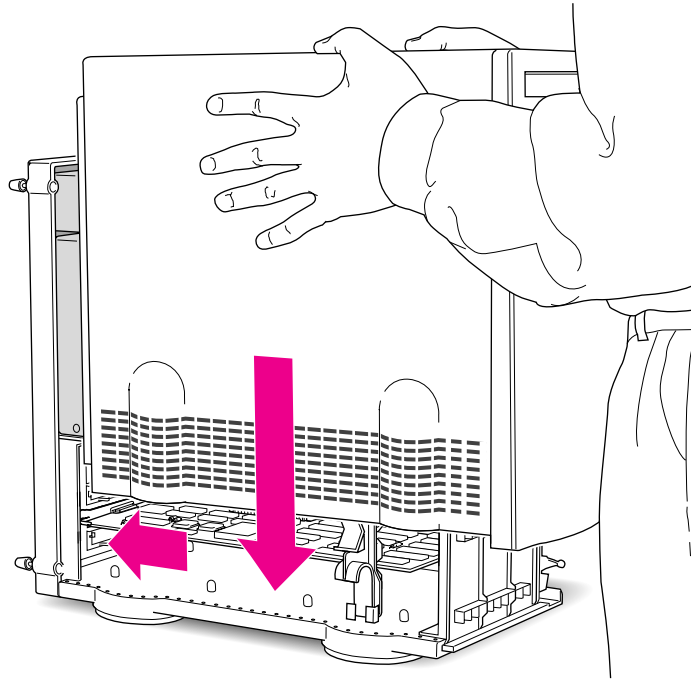
10 Replace the expansion card clip.

Put the bottom of the clip in place first. Make sure the edge of the expansion card fits into one of the slots on the clip.



11 Replace the cover on the computer.

Lower the cover all the way down onto the case. Push the cover back until it touches the back panel.



12 Tighten the screws on the back panel.

WARNING Always replace the cover before turning the computer on.

Expanding memory

The random-access memory (RAM) in your computer can be expanded by adding Single Inline Memory Modules (SIMMs) to those already installed or by exchanging installed modules for ones that have greater storage capacity.

In the Power Macintosh 8100/80, the memory used to display images on the screen (called video RAM, or VRAM) can also be expanded. In the 8100/80AV, VRAM cannot be expanded.

Make sure that SIMMs you purchase for memory expansion are the correct ones for your Macintosh. SIMMs for your model of Macintosh must be installed in pairs of the same size into paired slots. See the *Technical Information* booklet for details.

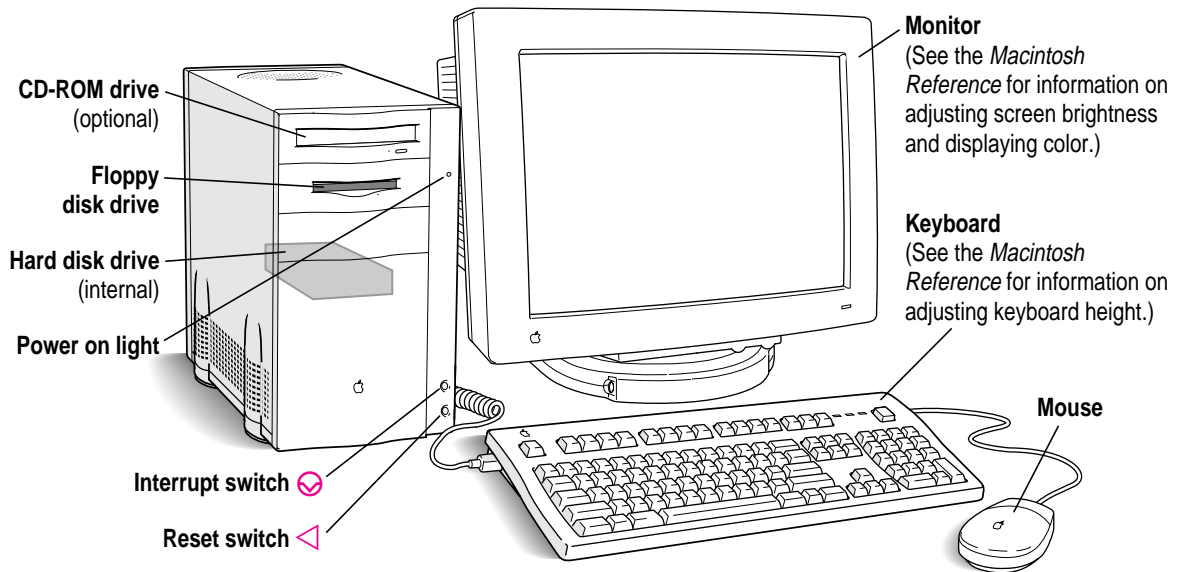
WARNING Apple recommends that additional memory on the main circuit board should be installed by an Apple-authorized service provider or technician. Modification of the circuit board by anyone except a qualified technician voids your warranty and could damage your computer.

Installing other internal devices

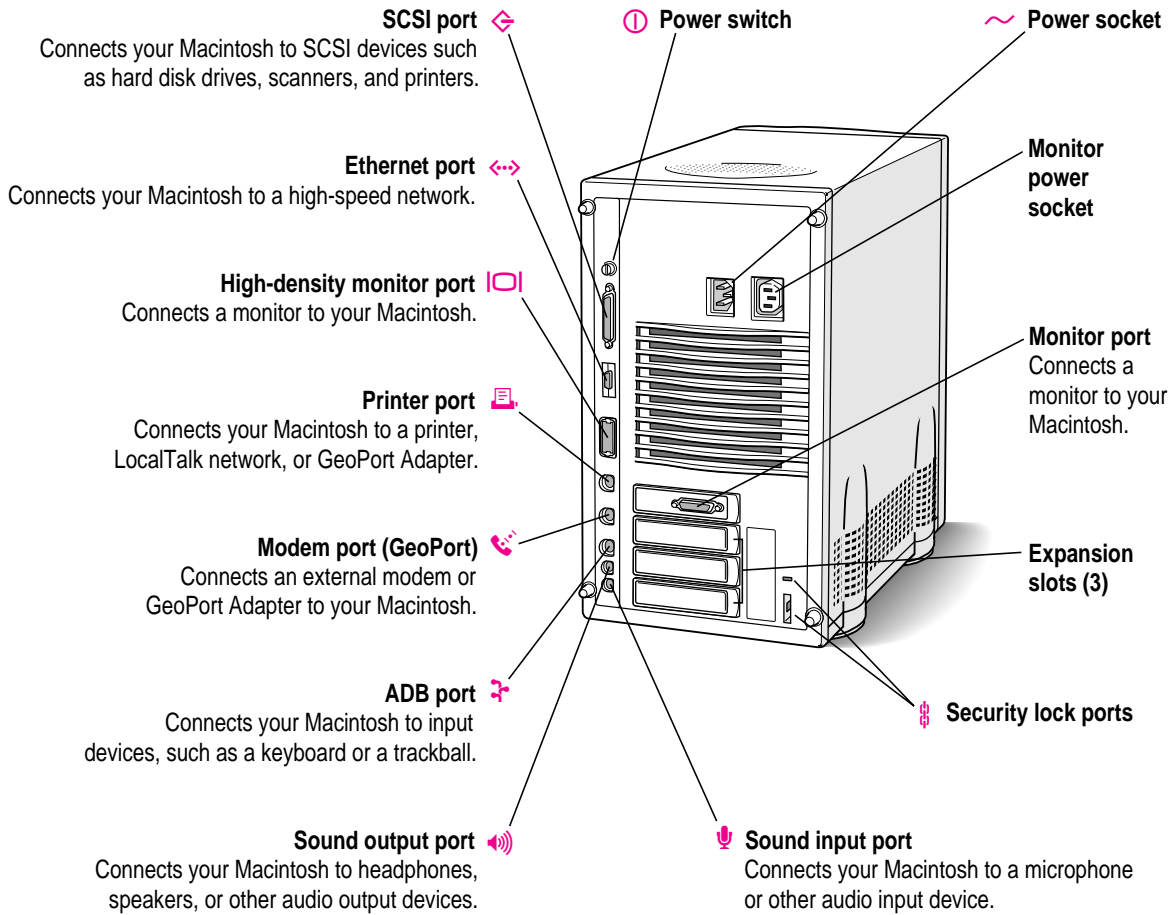
Your Macintosh holds up to three internal storage devices, including a floppy disk drive, a CD-ROM drive, and a hard disk drive (several capacities are available). See your Apple-authorized dealer for information about adding internal equipment to your Macintosh.

Your computer at a glance

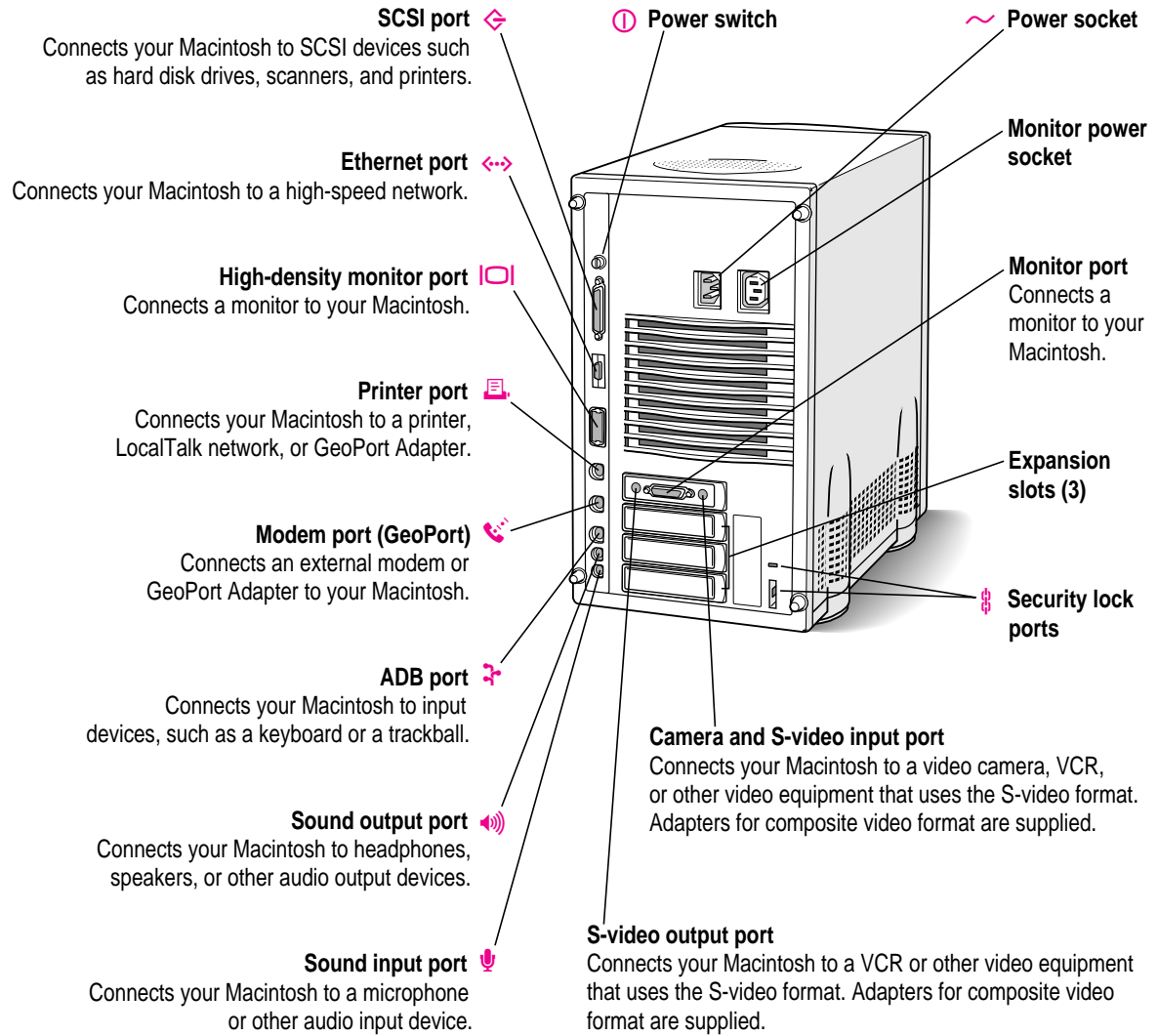
The illustrations on this page and the next pages provide a detailed look at your Macintosh hardware, including the ports you use to connect external equipment.



Power Macintosh 8100/80 computer

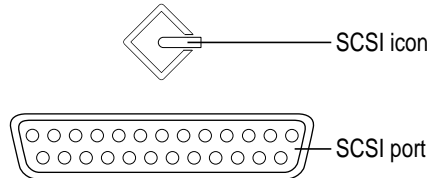


Power Macintosh 8100/80AV computer



Connecting hard disks and other SCSI devices

Your computer has a port for connecting devices that use the Small Computer System Interface (SCSI, pronounced “skuh-zee”). The SCSI port permits high-speed communication between the computer and the device. The SCSI icon appears above the port on the computer’s back panel.



IMPORTANT Follow the instructions in this section and the instructions that came with your hard disk or other SCSI device when connecting it to your Macintosh.

SCSI devices commonly used with the Macintosh include hard disks, CD-ROM drives, scanners, printers, and tape backup drives.

Your computer comes with one SCSI device already installed—your internal hard disk. You can connect up to six additional SCSI devices in a chain. Each device must have its own, unique ID number.

Setting up a SCSI device to use with your Macintosh involves

- installing any necessary device drivers
- setting the device’s SCSI ID number
- physically attaching the device to your Macintosh

Note: Your computer has a second, internal SCSI connector to support an internal hard disk array. If you wish to install a hard disk array, contact an Apple-authorized service provider for assistance.

Installing a device driver

A device driver is software that lets the Macintosh communicate with a particular SCSI device.

To install a driver:

- Drag the driver icon to the System Folder icon on your startup disk.

Any drivers needed for a SCSI device are usually on a floppy disk that comes with the device. (If no drivers come with the device, then it doesn't need any.) You may have to restart your Macintosh to activate the driver.

Setting the SCSI ID number

See the instructions that came with your SCSI device for information on setting its SCSI ID number.

WARNING Each SCSI device connected to your Macintosh must have its own, unique ID number between 1 and 6. Using two or more devices with the same ID number can cause your equipment to malfunction. You could lose data as a result.

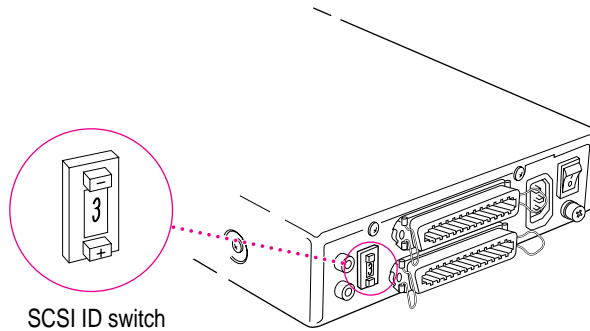
If you have an Apple SCSI device, set the SCSI ID number as follows:

- 1** Make sure the device is switched off.
- 2** Choose a number between 1 and 6 that hasn't been assigned to any other SCSI device connected to your Macintosh.

Your internal hard disk's ID number is preset to 0, and your Macintosh itself has the ID number 7.

If your computer came with an internal CD-ROM drive already installed, its SCSI ID number is preset to 3.

- 3 Locate the ID number switch on the back of your SCSI device.



- 4 Push the ID switch repeatedly until the number you want appears.

On some SCSI devices, the ID number switch is inside a small hole. Insert a straightened paper clip to push the switch.

Attaching a SCSI device

To connect a SCSI device to your Macintosh:

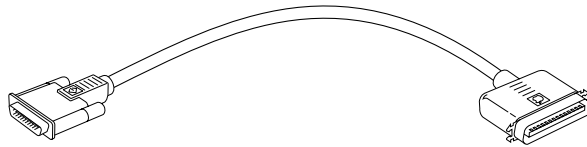
- 1 Turn off your Macintosh.
- 2 Make sure the SCSI device is switched off.

WARNING Do not connect or disconnect any device while the device or your Macintosh is turned on. Doing so could damage the device, your computer, or both.

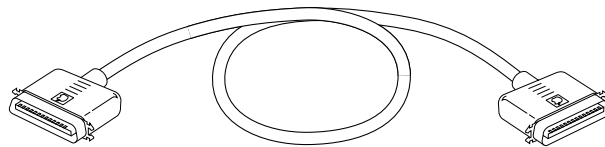
- 3 Make sure the device has its own, unique ID number between 1 and 6.

- 4 Use a SCSI cable to connect the device either to the computer's SCSI port or to the last SCSI device already in the chain.

If the device is the first or only one you're connecting, use a SCSI system cable to connect it to the computer's SCSI port.



If the device is not the first one, use a SCSI peripheral interface cable to connect it to the last device in the chain.

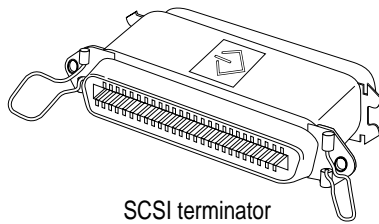


IMPORTANT The total length of the cables in a SCSI chain should not exceed 6 meters (20 feet). SCSI cables must have a 110-ohm impedance. For best results, use SCSI cables manufactured by Apple Computer.

- 5 **Make sure that the last (or only) device in the SCSI chain has a terminator. Make sure that no other external SCSI device has a terminator.**

To ensure accurate transmission of information, a terminator must be at each end of a SCSI chain. Your internal hard disk, which is the first device in the chain, has a built-in terminator.

Some external SCSI devices from manufacturers other than Apple have a built-in terminator. (Check the information that came with the device.) If the device at the end of the SCSI chain does not have a built-in terminator, you need to attach an external terminator.



SCSI terminator

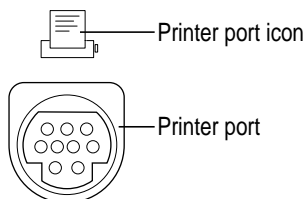
Have your Apple-authorized service provider remove any extra built-in terminators. You can attach or remove external terminators yourself.

Tip: If only one external device has a built-in terminator, rearrange the SCSI chain so that device is at the end.

IMPORTANT Always turn on any external SCSI devices connected to your Macintosh before turning on the computer itself. Otherwise, your computer cannot recognize the SCSI devices.

Connecting a printer

Your Macintosh has a printer port, which you use to connect a printer to your computer.



The printer port accepts either a direct cable connection (to printers such as the StyleWriter II) or a network cable connection (to printers such as a LaserWriter Pro or LaserWriter Select).

Follow the instructions that came with your printer when connecting it to your Macintosh.

A printer can also be connected to the modem port. You use the Chooser program to indicate the port you used to connect your printer. (See the *Macintosh Reference* for more information on using the Chooser.)

Connecting an additional monitor

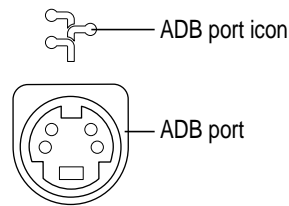
You can connect two monitors to your computer without installing an additional card. See the instructions that came with your monitor and “Connecting a Monitor” in Chapter 1.

When you connect an additional monitor:

- Make sure that the ventilation openings on the computer and the monitors are clear and unobstructed.
- If there is interference on your screens or on a television or radio near your Macintosh, separate or reposition the affected equipment.

Connecting a trackball or other input device

Your computer has an Apple Desktop Bus (ADB) port, which you use to connect the mouse, the keyboard, and other input devices such as a trackball, a bar-code reader, or a graphics tablet.



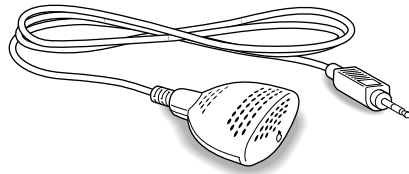
You can connect up to three ADB devices in a chain to a single port. The exact number depends on how much power the devices require.

IMPORTANT The total power used by all ADB devices connected to your Macintosh must not exceed 500 milliamperes (mA). Information about the power requirements of the mouse and keyboard are in the *Technical Information* booklet that came with your computer. Check the information that came with your other ADB device for power requirements.

Connecting a microphone

Your computer has a sound input port, which you can use to connect a microphone. With appropriate software, you can use the microphone to give spoken commands to your Macintosh and to record your voice or other sounds.

The Apple PlainTalk Microphone and the software needed for using spoken commands are available from Apple-authorized dealers. If you want to use another microphone, make sure it is compatible with your model of Macintosh.



The Apple AudioVision 14 Display has the Apple PlainTalk Microphone built in.

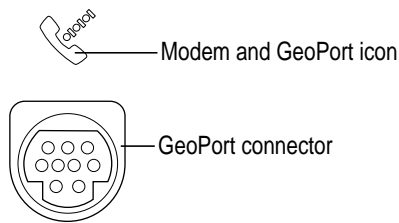
To connect the microphone:

- **Plug the microphone's connector into the sound input port (marked with the symbol Ψ) on the back of the computer.**

See “Connecting Stereo Audio Equipment” in Chapter 7 of this book for more information about the sound input port.

Connecting a GeoPort Telecom Adapter or modem

Your Macintosh has an enhanced telecommunications port called the GeoPort. By connecting the GeoPort Telecom Adapter, designed specifically for use with the GeoPort, you can take advantage of your computer's special communications capabilities. The GeoPort Telecom Adapter comes with communications and fax software and can be purchased from Apple-authorized dealers.



You can also connect a standard modem to the GeoPort, using a standard modem cable. A standard modem cannot take advantage of the computer's advanced communications features.

To connect an adapter or modem to your computer, follow the instructions that came with your adapter or modem.

You can also connect a printer to the modem port.

Connecting to a high-speed network

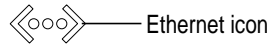
Your Macintosh comes with built-in Apple Ethernet for connecting to high-speed Ethernet networks. With the appropriate Apple Ethernet Media Adapter (or another compatible media adapter), you can connect your Macintosh to an existing Ethernet network, using thin coax, 10BASE-T twisted pair, thick coax, or other standard cables. (See your Apple-authorized dealer for more information on Apple Ethernet Media Adapters for your Macintosh.)

IMPORTANT Your Macintosh supports EtherTalk Phase 2 (AppleTalk Phase 2 protocols for Ethernet networks) and TCP/IP. The computer does not support EtherTalk Phase 1.

Connecting to an Ethernet network

You can connect an adapter and cable for an Ethernet network directly to the computer, without installing an expansion card.

The Ethernet port is identified with this symbol: <->.



To connect a cable to the Ethernet port, follow the instructions that came with the Ethernet adapter you want to use. If you need assistance, consult a network administrator or other technical expert.

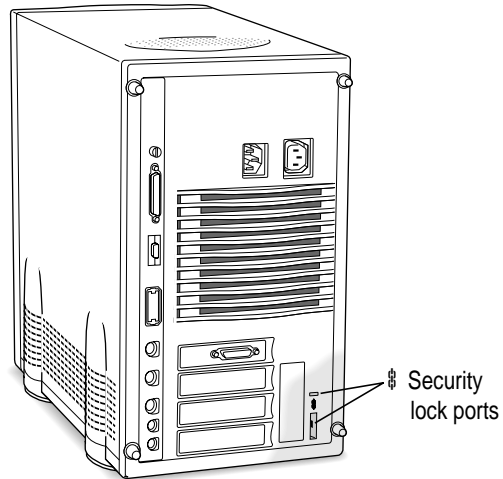
Once you've connected to an Ethernet network, you need to choose Ethernet in the Network control panel. See the networking chapter of the *Macintosh Reference* for instructions.

Connecting to a Token Ring network

By installing the appropriate expansion card, you can connect your Macintosh to a Token Ring network. Consult the documentation for your Token Ring expansion card and software for instructions.

Attaching a security lock

You can attach a security lock to your Macintosh to deter theft. The back panel has a built-in port for a security lock.



Follow the instructions supplied with the security lock to attach it to your computer.

Refer to this chapter for information
on programs designed for Power
Macintosh computers

6

Using Software With Your Power Macintosh



Using Power Macintosh application programs

Your Power Macintosh is compatible with most software programs intended for use with Macintosh computers. But certain programs are designed especially for Power Macintosh computers. You'll find that these programs take best advantage of your computer's speed.

Special memory requirements

Some Power Macintosh programs may be slightly larger than other programs, and may take up more memory. If you find that you are running out of memory when you use your Power Macintosh programs, you can use space on your computer's hard disk as additional memory. This feature is called *virtual memory*. See "Using Hard Disk Space As Memory" in the *Macintosh Reference*.

You can also add more memory to your computer as described in Chapter 5 of this book.

Shared libraries

Power Macintosh programs use special files called *shared libraries*. These files help Power Macintosh programs to run more efficiently, and can be used by more than one Power Macintosh program simultaneously. Any necessary shared libraries are installed automatically in the System Folder when you install Power Macintosh programs.

If a Power Macintosh program requires a shared library and there is not enough memory available for the shared library, you'll see a message that the program could not be opened because there is not enough system memory available for the shared library. If this happens, turn on virtual memory as described in the *Macintosh Reference*.

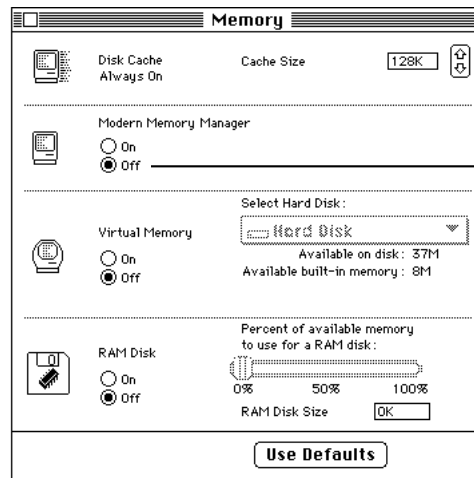
If a required shared library is missing, you'll see a message that the program could not be opened because the shared library could not be found. If this happens, follow the directions that came with your program to reinstall the program. If the shared library is still missing, contact the software program's manufacturer for assistance.



Using older Macintosh programs

If you experience problems using an older Macintosh program, it may be incompatible with your Power Macintosh. You may be able to use your older program if you change the Memory Manager setting in your Memory control panel. Follow these steps:

- 1 Choose Control Panels from the Apple () menu and open the Memory control panel.
- 2 Turn off Modern Memory Manager.



Click here to turn off Modern Memory Manager.

When you are finished using the program, open the Memory control panel again and turn Modern Memory Manager back on.

For best performance, contact the program's manufacturer for an upgrade.

The software programs that came with your computer

Your computer has several application programs already installed. You'll find these programs in the Apple Extras folder on your hard disk. One of the programs, Video Monitor, is for use with computers that have AV capabilities. Video Monitor is described in Chapter 8 of this book.

The *Guide to Apple Extras* in the Apple Extras folder contains information about the programs supplied with your computer. To read about the programs, open the Apple Extras folder and double-click on the Guide to Apple Extras icon.

Read this chapter to learn how to
use stereo audio equipment
with your computer

7

Using Stereo Audio



Your Macintosh produces stereo sound and provides several options for high-quality audio.

When an audio device is connected to the sound input port, you can hear or record the incoming sound on the computer.

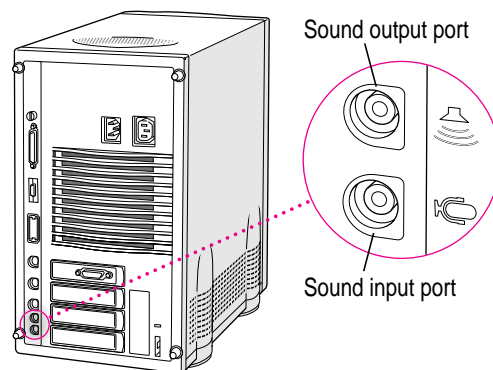
When an audio device is connected to the sound output port, you can record the sound produced by the computer or play that sound through external speakers.

This chapter explains how to connect stereo equipment to your Macintosh.

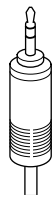
About your computer's sound ports

Your Macintosh can play and record stereo sound from a variety of sources. To provide or reproduce stereo sound, you can connect audio devices to the sound input and output ports on the computer. If you have an internal CD-ROM drive, you can also use it to play and record sound from audio compact discs (CDs).

The sound input port is identified with an icon of a microphone. The sound output port is identified with an icon of a speaker.



The computer's sound ports accept an audio connector known as a stereo miniplug. This connector is the type used on headphones for a personal tape player, for example. If your equipment uses a different type of connector, you can purchase an adapter at an electronics supply store.



Stereo miniplug

Connecting an audio device

To play or record sound with your Macintosh, you can attach a microphone, amplifier, tape recorder, or a pair of speakers.

If your Macintosh has AV capabilities, you can record sound and video simultaneously by connecting a VCR to the S-video output port and linking the computer's sound output port to the sound input channels on the VCR. (See "Connecting a VCR to View Video Images or Capture Frames" in Chapter 8.)

Follow these steps to connect an audio device to the Macintosh.

- 1 Make sure that the audio device has a cable with a stereo miniplug connector.**
If not, attach an adapter that has a stereo miniplug.
- 2 Place the audio device near the Macintosh.**
- 3 Shut down the Macintosh and turn off the audio device.**
- 4 Attach the cable to the audio device and to the sound port on the Macintosh.**
- 5 Turn on the computer and the audio device and begin working with sound.**

About microphones: Be sure to use a microphone designed for your model of the Macintosh, such as the Apple PlainTalk Microphone. You can obtain information about other microphones from an Apple-authorized dealer.

The Apple PlainTalk Microphone and the software needed for using spoken commands are available from Apple-authorized dealers.

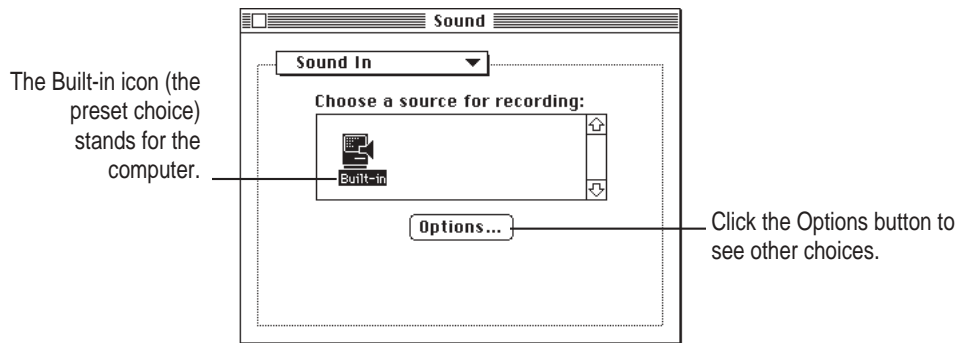
Choosing audio input options

You use the Sound control panel to choose the audio input device and options you want.

Follow these steps to choose the sound input device.

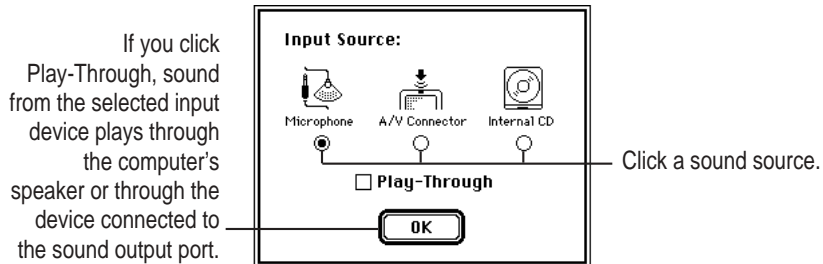
- 1** If you want to use an external device for sound input, connect it to the sound input port following the instructions in the previous section.
- 2** Open the Sound control panel and choose Sound In from the pop-up menu.

The Sound control panel is in the Control Panels folder in the Apple () menu.



- 3** To change the selected sound input device, click the Options button.

The Input Source options appear.



The microphone icon stands for the device connected to the sound input port. The AV Connector icon appears if you have an AudioVision monitor.

- 4 Click the button for the audio device you want to hear, then click OK.

If you have software for using spoken commands with your computer, please note:

- To use an AudioVision monitor's microphone for spoken commands, select the AV Connector icon in the Input Source options.
- To use a microphone connected to the sound input port for spoken commands, select the Microphone icon.
- If Play-Through is selected, you won't be able to give spoken commands to the computer.

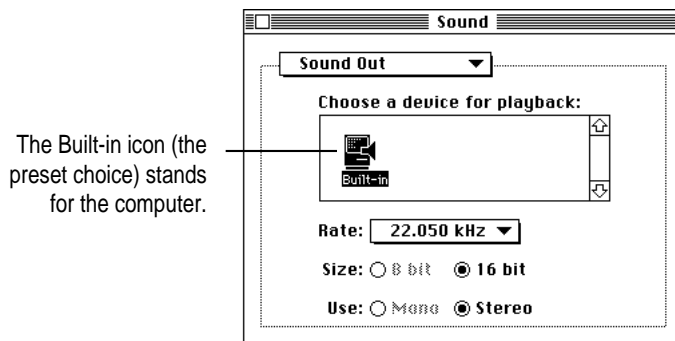
Choosing audio output options

You use the Sound control panel to designate the audio output device and options you want.

Follow these steps to direct the computer's sound to an output device.

- 1 If you want to use an external device for sound output, connect it to the sound output port, following the instructions under "Connecting an Audio Device."
- 2 Open the Sound control panel and choose Sound Out in the pop-up menu.

The Sound control panel is in the Control Panels folder in the Apple (🍏) menu.



3 Click the icon that represents the source of sound output.

About the sample rate: Most of the time you will not need to change the sample rate. Use the Rate pop-up menu to change the sample rate only if the sound you wish to play was recorded at a sample rate different from the current setting. For instance, if you play a QuickTime movie containing sound recorded at 44.1 kHz, set the sample rate in the Rate pop-up menu to 44.1 to hear the full quality of the sound. Increasing the sample rate slows performance.

- Do not set the sample rate higher than the sample rate of the sound you are playing, since this slows your computer's performance without improving sound quality.
- Do not change the sample rate if playthrough is in effect.
- Do not change the sample rate for sound coming from a device connected to the sound input port.

The other options cannot be changed. If you use a program that provides sound recording in mono format, you can use its mono setting.

4 Close the Sound control panel.

Recording an alert sound

Although your Macintosh can produce stereo sound, the computer records alert sounds in the same way as other Macintosh models: in 8-bit mono sound, at a sample rate of 22.254 kHz. This makes the alert sounds you record compatible with all Macintosh computers. See the *Macintosh Reference* for instructions on recording an alert sound.

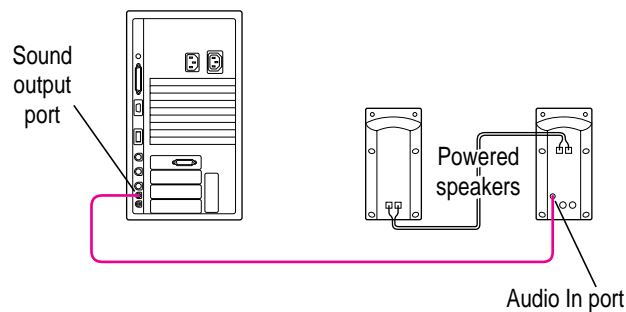
Connecting external stereo speakers

You can take advantage of your computer's stereo sound output by attaching external powered (amplified) speakers.

1 Assemble the speakers and the cable you need.

You need a cable with stereo miniplugs at each end to connect one or both speakers to the computer. (Some speakers require a dual-plug adapter. Others, like those shown here, accept a single stereo miniplug and are joined by standard speaker wires.)

The illustration below shows the equipment configuration and the connections for a computer sound system.



2 Turn off the Macintosh.

3 Plug a stereo miniplug into the sound output port on the Macintosh.

4 Plug a stereo miniplug into the Audio In socket on one of the speakers.

If the speakers take a dual-plug cable, connect both plugs.

5 Connect the speakers together with speaker wires, if necessary.

6 Turn on the computer.

Now you hear the computer's sound through the external speakers.

Note: To control the volume of your external speakers, open the Sound control panel and choose Volumes in the pop-up menu. Use the Built-in Headphones slider to adjust your external speakers. If you are playing an audio CD, you may also need to adjust the volume control in the program you're using to play CDs.

Playing audio CDs

If your Macintosh has an internal CD-ROM drive or you connect an external CD-ROM drive or CD player, you can use audio CDs with the Macintosh.

Follow these steps to play CD audio sound through the computer's internal speaker.

1 Place an audio CD in the CD-ROM drive or CD player.

See the information that came with your equipment for details about inserting a CD.

2 Use the Sound control panel to choose the CD-ROM drive or CD player as the sound input device and click Play-Through to hear the CD.

3 Use your audio CD software to play the CD.

If you have either the CD Remote or AppleCD Audio Player program, choose the program from the Apple (🍏) menu and click Play.

See the instructions that came with your CD-ROM drive for more information about playing audio CDs.

Read this chapter to learn how to
use video equipment with your
Power Macintosh 8100/80AV

8

Using Video With Your Power Macintosh 8100/80AV

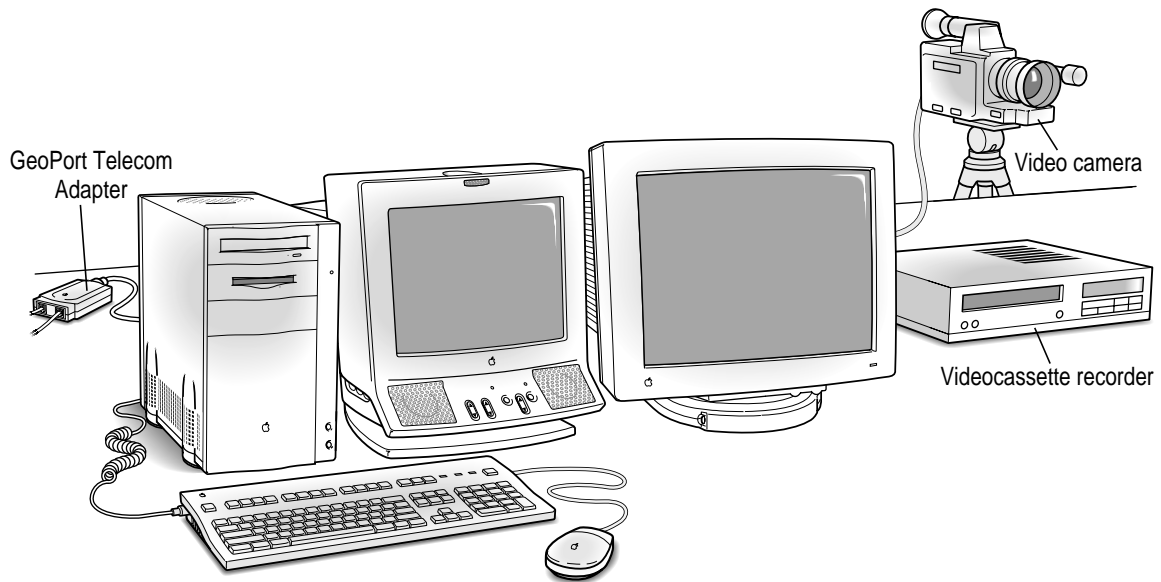


You can connect video equipment to your Power Macintosh 8100/80AV. You can display, edit, and store video images on the computer, and view or record the computer's images on a television or video recorder (VCR). This section provides the information you need to

- Connect video equipment for input, so you can display the video image on your monitor, capture single frames, or save digitized video in files.
- Connect video equipment for output, so you can display or record what's on the computer's screen.
- Display the computer's images on a television.
- Adjust settings for video input or output.

Example of a Macintosh system for working with video

If your Macintosh is equipped with AV capabilities, you can create a powerful system that combines computing, video, stereo audio, and telecommunications.



About your computer's video ports

Your AV-equipped Macintosh can display and use video images from a variety of sources. To view video on your monitor, you connect a video device to the video input port on the computer. To display or record the computer's output, you connect a video device to the video output port.

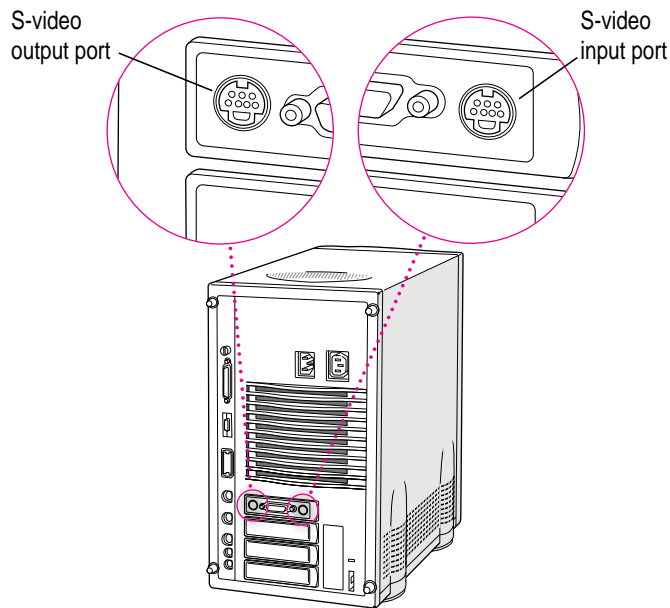
The Macintosh can work with two major video formats:

- S-video
- Composite video

S-video is a high-quality video format used by many video cameras and VCRs. Televisions, most videocassette recorders, and laserdisc players use the composite format.

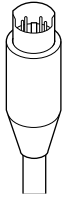
The S-video input and output ports

The illustration below shows the location of your computer's S-video input and output ports.



S-video connectors

The S-video connector is a round plug with several small metal pins.



S-video connector. You can plug this type of connector into your computer's S-video input or output ports.

IMPORTANT The S-video connector resembles other Macintosh connectors, such as those for a printer, modem, mouse, or keyboard. Don't confuse the connectors; they are not interchangeable.


Adapters for composite video


Many video devices use composite video format instead of S-video. The cables for these devices have RCA-type plugs, as shown below.

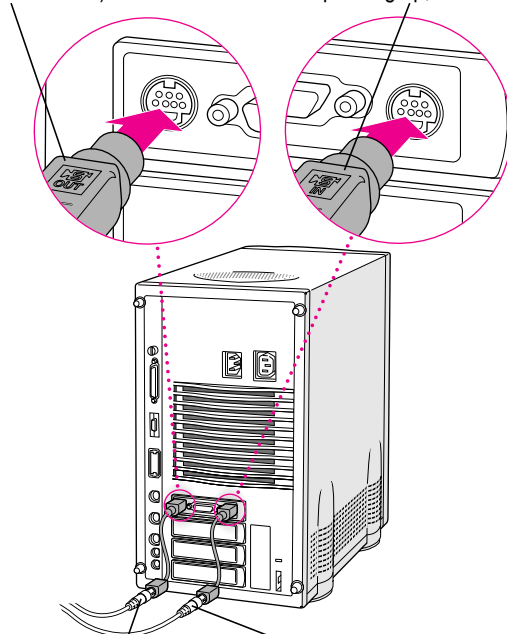



RCA plug. Use the adapters that come with your computer to plug this type of connector into your computer's S-video input or output ports.


Two adapters for composite (RCA-type) video connectors come with your computer. To connect a cable with RCA plugs to your computer, connect the RCA plug to one of the adapters, and connect the adapter to the appropriate S-video port (input or output) on the back of your computer.

Connect the end marked with the  icon to the computer's S-video output port. (The connector should have the flat part pointing up, as shown here.)

Connect the end marked with the  icon to the computer's S-video input port. (The connector should have the flat part pointing up, as shown here.)



To record images from your computer on a VCR or other video device, attach the end of the adapter marked with the  icon to a cable with RCA plugs, then connect the cable's other RCA plug to the video input port on the video device.

To view images from your VCR or other video device on your monitor, attach the end of the adapter marked with the  icon to a cable with RCA plugs, then connect the cable's other RCA plug to the video output port on the video device.




Connecting a VCR to view video images or capture frames

The steps that follow tell you how to connect a stereo VCR to the Macintosh so that you can view video or capture a single video frame and hear the sound from the VCR through the computer's speaker. You can use these instructions as a model for connecting your equipment to any video device.

Before you start:

- Make sure that the VCR has a cable with either a composite (RCA plug) connector or an S-video connector.

If the VCR has an RCA plug, make sure you have the adapter for composite video marked with the  icon.

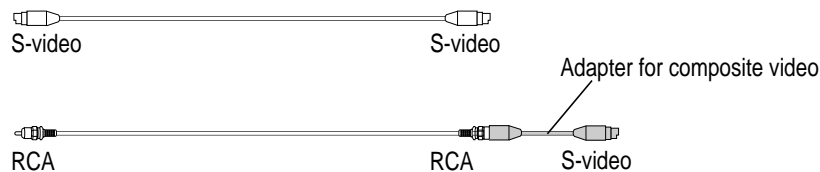
- Place the VCR near the Macintosh.
- Shut down the Macintosh and turn off the VCR.

Then follow these steps:

1 Assemble the cables you need to connect the VCR to the Macintosh.

You need the following cables (available at an electronics supply store):

- Video cable with S-video connectors or RCA plugs at each end.



- Audio cable with dual RCA plugs at one end and a stereo miniplug at the other end.



You can also use an all-in-one cable (with one video and two audio RCA plugs at each end) if you attach appropriate adapters.

IMPORTANT A Y-shaped adapter is supplied with the round microphone for some models of the Macintosh. This adapter is not compatible with your Macintosh.

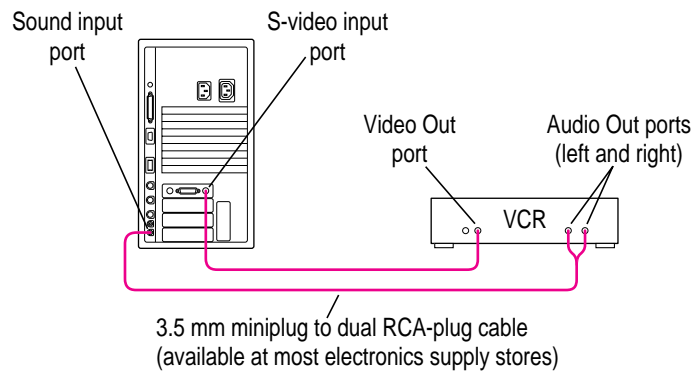
- 2** Attach one end of the video cable to the Video Out socket on the VCR (follow the directions that came with the VCR).
- 3** Plug the other end of the video cable (or adapter) into the S-video input port on the Macintosh.

If the connector doesn't slide easily into the port, realign it and try again. Using force could damage the computer or cable.

- 4** Plug the RCA connectors on the audio cable into the left and right Audio Out sockets on the VCR.
- 5** Plug the stereo miniplug on the audio cable into the sound input port on the Macintosh.

For more information about the sound input port and the stereo miniplug, see Chapter 7.

The illustration below shows the correct connections.



- 6** Turn on the computer and the VCR.

You can now begin working with the video equipment connected to your Macintosh. The next two sections explain how to view video on the screen and capture a single frame.

Opening a video window on the screen

Using the Video Monitor program provided with your Macintosh, you can view video on the screen and capture a single video frame.

You'll find the Video Monitor program in the Apple Extras folder on your hard disk. Refer to the *Guide to Apple Extras*, also in the Apple Extras folder, for additional information about Video Monitor.

Follow these steps to see video on the computer screen.

- 1 Make sure that a video device is connected to the video input port.**

If you need to connect a device, turn off both the computer and the video equipment first.

- 2 Open the Apple Extras folder on your hard disk and locate Video Monitor.**

- 3 Double-click the Video Monitor icon to start the program.**



The Monitor window appears. If the video device is already on and is playing, its images appear in the window.

- 4 Turn on the video device and play an image (usually by pressing the Play button).**

The video image appears inside the Monitor window. If you don't see an image, continue with step 5. Otherwise, skip ahead to "Video Images and Memory Allocation."



IMPORTANT If your monitor has a 21-inch screen (resolution of 1152 x 870) or a 19-inch screen (resolution of 1024 x 768), the video image will appear in 256 shades of gray.

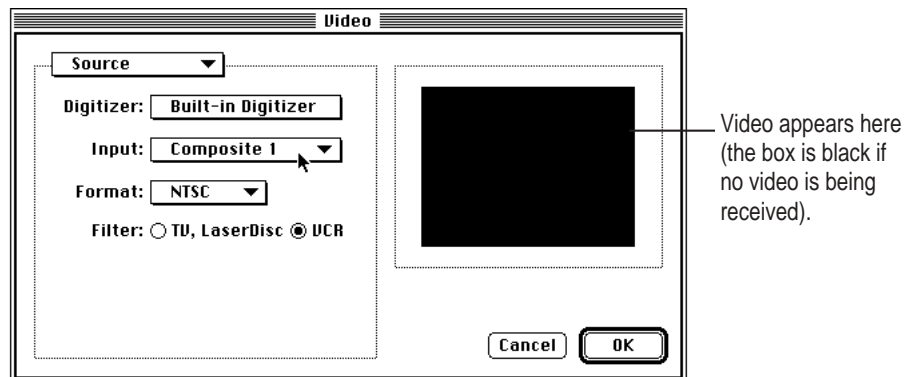
- 5 If no image appears in the Monitor window, choose Video Settings from the Monitor menu.



The Video window appears.

- 6 Choose Source from the pop-up menu at the top left side of the Video window.

New choices appear in the window.



- 7 Change the choice in the Input pop-up menu or the Format pop-up menu.

- The Input choices indicate the input port for the video device. The preset choice is composite video.
- The Format choices indicate the format, or standard, of the video signal. The preset choice is NTSC, which is used in the U.S. and Japan.

If after choosing the correct input and format you still don't see an image in the video window, check that you've connected the video device correctly, that it is turned on, and that it is playing.

Video images and memory allocation

When you display video images using Video Monitor or another program, the video images use a portion of the computer's screen memory (also called video RAM, or VRAM).

If you see a message in the Monitor window stating that video is turned off, you need to set the monitor to display fewer colors or grays. This allows the computer to allocate additional memory to the video image.

You use the Monitors control panel to change the number of colors or grays displayed. See the *Macintosh Reference* for instructions.

Capturing one frame of a video image

You can capture a single video frame to use in presentations or documents. Follow these steps:

- 1 Display a video image on the screen, using the Video Monitor program.**

See “Opening a Video Window on the Screen” earlier in this chapter.

- 2 Choose Copy from the Edit menu.**

One frame of the video image will be copied to the Clipboard or saved as a PICT file (a common graphics format). You can then paste the frame into a graphics program, edit it, and save it.

If you see a message that there is not enough memory to copy the frame, try reducing the size of the video window.

IMPORTANT Prerecorded videotapes, broadcast video programs, and other prerecorded images, movies, and sound, whether in video, audio, or digital form, may be proprietary and protected by copyright. If you want to use prerecorded materials, you may need to obtain the consent of the copyright owner or seek the advice of a lawyer.

Recording video movies

You can purchase application programs that allow you to record, play, and edit video segments. Several utility programs for working with video and animation are included in the Apple QuickTime Starter Kit, available from Apple-authorized dealers.

Video images occupy large amounts of memory and disk space. You may want to increase the amount of RAM and disk storage in your Macintosh if you plan to work with video frequently.


Recording a computer presentation on videotape with voice annotation

You can deliver and record a sophisticated presentation by combining the video and sound capabilities of your Macintosh. The steps that follow tell you how to set up equipment for recording the computer's output on videotape and adding voice annotation with a microphone.

You can use these instructions as a model for connecting your equipment to record video output and voice.

Before you start:

- Make sure that the VCR has a cable with either a composite (RCA plug) connector or an S-video connector.

If the VCR has an RCA plug, make sure you have the adapter for composite video marked with the  icon.

- Place the VCR near the Macintosh.
- Shut down the Macintosh and turn off the VCR.

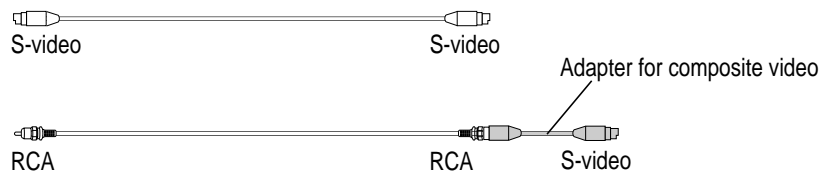
Then follow these steps:

1 Assemble the VCR, television, microphone, and cables you need.

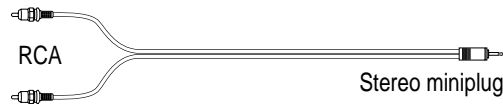
Be sure to use a microphone designed for your model of the Macintosh, such as the Apple PlainTalk Microphone.

You need the following cables (available at an electronics supply store):

- Video cable with S-video connectors or RCA plugs at each end.



- Audio cable with dual RCA plugs at one end and a stereo miniplug at the other end, or dual RCA plugs at each end.



- A cable to connect your TV to your VCR.

You can also use an all-in-one cable (with one video and two audio RCA plugs at each end) if you attach appropriate adapters.

IMPORTANT A Y-shaped adapter is supplied with the round microphone for some models of the Macintosh. This adapter is not compatible with your Macintosh.

2 Attach one end of the video cable to the Video In socket on the VCR (follow the directions that came with the VCR).

3 Plug the other end of the video cable (or adapter) into the S-video output port on the Macintosh.

If the connector doesn't slide easily into the port, realign it and try again. Forcing a connector into the port could damage the computer or cable.

- 4 Plug the RCA connectors on the audio cable into the left and right Audio In sockets on the VCR.
- 5 Plug the stereo miniplug on the audio cable (or adapter) into the sound output port on the Macintosh.

For more information about the sound output port and the stereo miniplug, see Chapter 7.

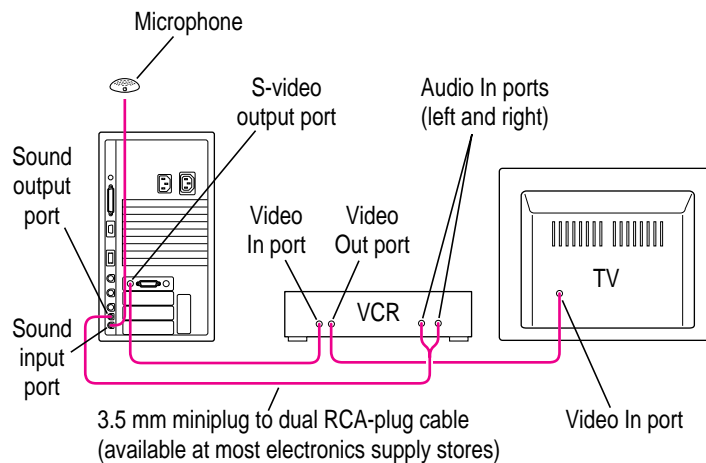
- 6 Connect the VCR's Video Out port to the television's Video In port.

Use an RCA or S-video cable to connect the VCR to the television. Do not use coaxial cable.

To ensure that your presentation is recorded on videotape and shown on the television, you must connect the VCR to the computer and the television to the VCR.

- 7 Connect the microphone to the sound input port (Ⓜ) on the Macintosh.

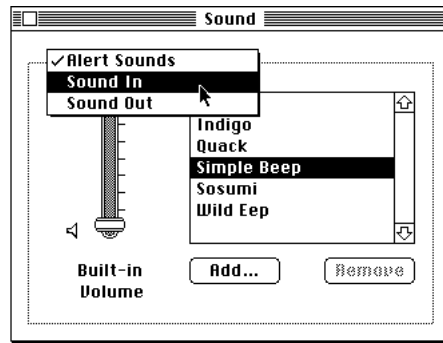
The illustration below shows the equipment configuration and the connections needed to record the computer's video output and to add voice annotation to the video.



- 8 Turn on the computer, the VCR, and the television.

- 9 **Open the Sound control panel and choose Sound In from the pop-up menu.**

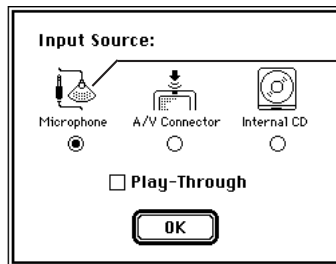
The Sound control panel is in the Control Panels folder in the Apple () menu.



- 10 **Click the Options button.**

The Input Source dialog box appears.

- 11 **Make sure that Microphone is selected, then click the Play-Through box and click OK.**



The Microphone icon stands for the device connected to the sound input port.


When devices are connected to both the sound input and output ports, the playthrough option sends the incoming sound (from the microphone in this example) to the device connected to the sound output port (the VCR in this example).

- 12 **Close the Sound control panel.**

You're almost ready to record. But before you can begin recording, you need to display the computer's output on the television. Follow the steps in the next section, "Using a Television as a Monitor."

Using a television as a monitor

There are two ways to use a television as a monitor:

- As just described in the previous section, you can connect a VCR to the computer's S-video output port, and connect a television to the VCR's video output port. Then you can record a presentation on videotape as it is displayed on the television.
- You can connect a television directly to the computer's S-video output port and display the computer's images on it. This capability is especially useful if you're using your Macintosh to give a presentation and you have access to a large-screen television. If your television does not support S-video, attach the adapter for composite video as described earlier in this chapter. (Be sure to use the adapter marked with the  icon.)


Follow these steps to display the computer's images on a television.

1 Make sure that the television is connected and turned on.

If you are recording a presentation, the television should be connected to the VCR's video output port.

If you are displaying the computer's images without recording, the television should be connected to the computer's S-video output port.

2 Open the Monitors control panel and click the Options button.

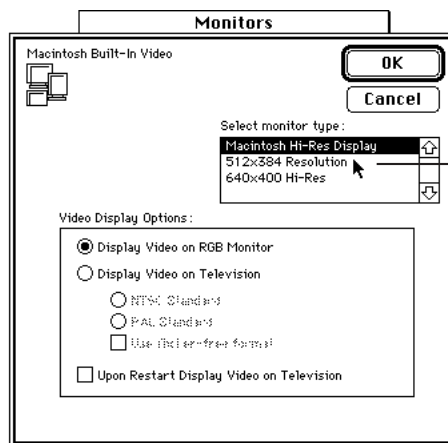
The Monitors control panel is located in the Control Panels folder in the Apple () menu.

- 3 In the box labeled “Select Monitor Type,” choose one of the resolution types listed.**

You can usually use one of these:

- 512 x 384 Resolution for the NTSC standard used in the U.S. and Japan
- 640 x 480 Resolution or lower (Macintosh Hi-Res Display, 640 x 400 Hi-Res, or 640 x 480 Resolution) for the PAL and NTSC standard in most of Europe and Australia

You need to choose a resolution of 640 x 480 or lower to ensure that the computer’s entire image is shown on the television and recorded on videotape.



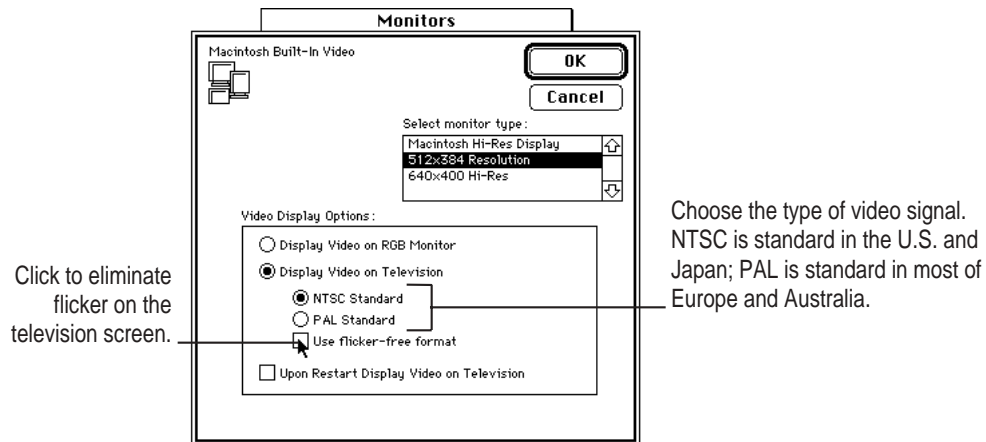
The choices in this list vary according to the monitor you’re using. If your monitor is larger than 14 inches, select a resolution of 640 x 480 or smaller to show the entire image on a television.

- 4 Click OK.**

The Options dialog box closes.

- 5 Open the Monitors control panel if it is not already open, and click the Options button.**

- 6** In the Video Display Options section, click the button labeled “Display Video on Television.”



- 7** Click the options you want, then click OK.

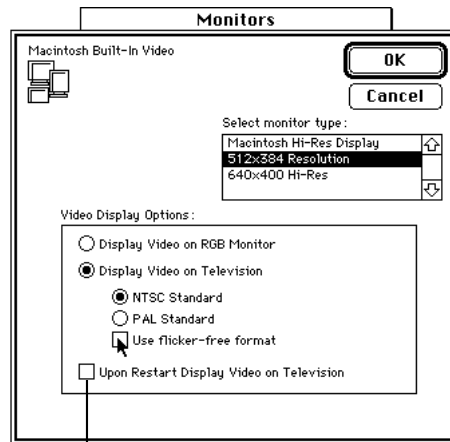
A dialog box appears, asking you to confirm your changes.

- 8** Click Switch to use the television as the monitor.

The computer’s image is displayed on the television. The regular monitor goes dark.

Repeat steps 2 through 8 to switch from the television back to the regular monitor. Choose your regular monitor’s type in step 3 and select “Display Video on RGB Monitor” in step 6.

To use the television as the startup monitor, click the Options button on the Monitors control panel, and check the box shown below.



Click this box if you want to use the television as the monitor when the computer starts up.

To resume using a regular monitor as your startup monitor, open the Monitors control panel, click Options, and click “Display Video on RGB Monitor.”

IMPORTANT If you are using a television as your startup monitor, and you wish to disconnect it, be sure to switch back to your regular monitor and turn the computer off before disconnecting the television. Otherwise, you may not be able to see the menu bar when you restart the computer.

Tip: If you can't see the menu bar, hold down ⌘-Option-P-R while you start the computer. Continue holding the keys until you hear the start-up tone twice; then release the keys. A normal desktop will appear. (Restarting in this manner may affect some of your control panel settings. Check the Memory and control panel, and, if your computer is on an Ethernet network, check to see that Ethernet is selected in the Network control panel.)

For more information on problems switching between a television and a regular monitor, read the file named *Power Macintosh Read Me*. You'll find this file on your computer's hard disk.

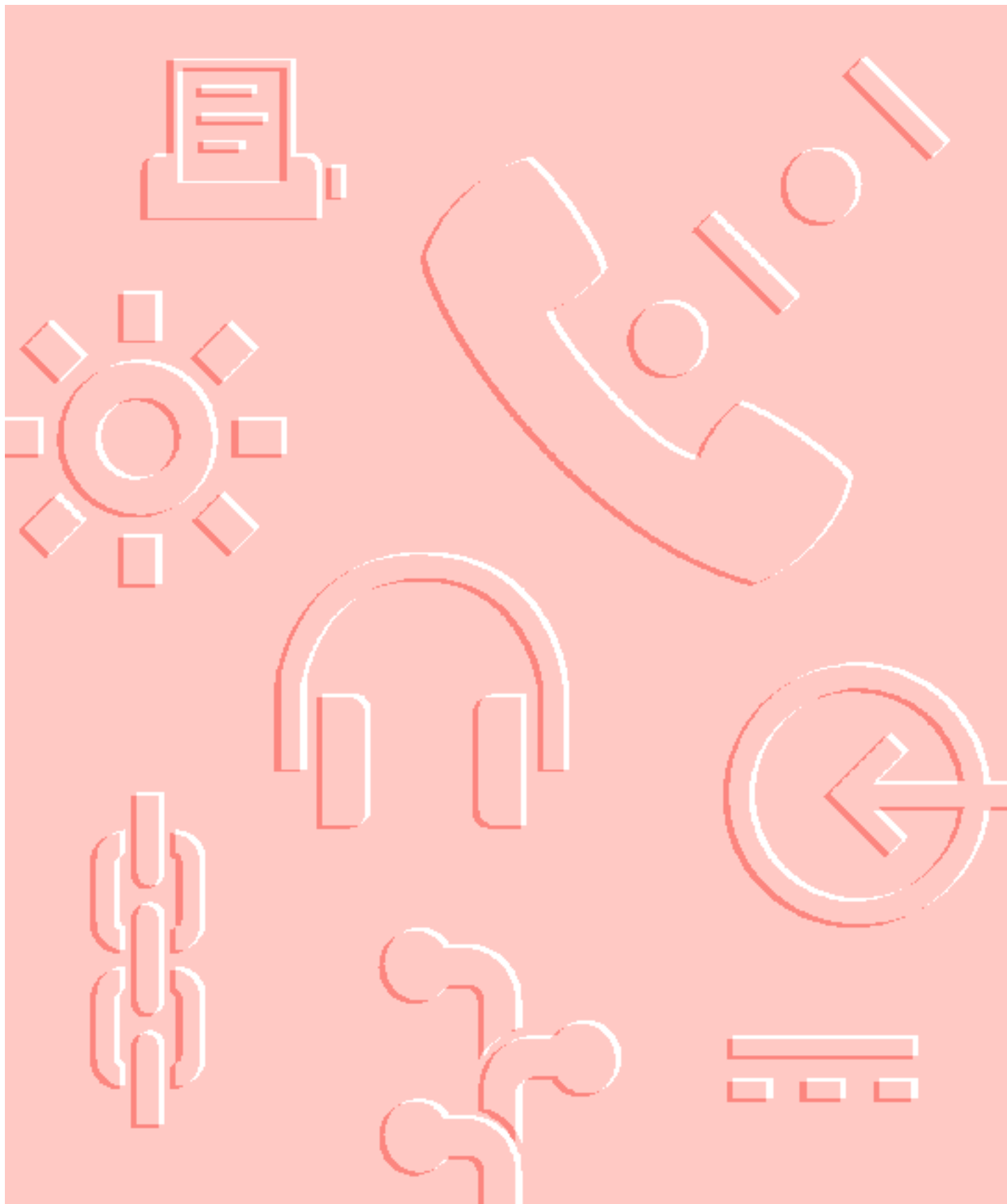
Troubleshooting

Chapter 9 Solutions to Common Problems

Chapter 10 Reinstalling System Software

Part III contains information on what to do if you experience problems with your computer.

III *part*



Refer to this chapter if you experience
problems using your computer

9

Solutions to Common Problems



When you run into trouble

While you're using your computer, you may occasionally see a bomb icon, an error message, or experience a problem such as the pointer "freezing" on the screen. If you have trouble with your computer, take a moment to read the information in this section. Check the solutions to common problems listed later in this section. If your problem is related to a particular procedure, look for information about the procedure in the *Macintosh Reference*.

For additional troubleshooting information, read the file named *Power Macintosh Read Me*. You'll find this file on your computer's hard disk.

Take your time

When you see an error message, you don't have to take action immediately. The message stays on the screen until you click the OK button or turn off the Macintosh.

To help diagnose and correct the problem, gather as much information about the situation as you can before starting over:

- Make a note of exactly what you were doing when the problem occurred. Write down the message on the screen and its ID number (if any). Also list the programs you were using and the names of any items you know have been added to the System Folder since the system software was installed. This information will help a service person diagnose the problem. (It is helpful to keep a printed copy of the items in your System Folder. See the *Macintosh Reference* for information on printing the contents of a folder.)
- Check the screen for any clues. Is a menu selected? What programs and document icons are open? Note anything else that seems relevant.
- If you were typing text and were not able to save it before the problem occurred, you can write down the parts of the text still visible on the screen so that some of your work will be easy to replace.
- Ask other Macintosh users about the problem you're having; they may have a solution for it.

If you need repair service, consult the service and support information that came with your computer for instructions on how to contact an Apple-authorized service provider or Apple for assistance.

Start over

Often you can eliminate a problem simply by clearing the computer's memory and starting over.

If you can, save any open documents before restarting the Macintosh. If your system is "frozen" and does not respond to any input, or if you have a "bomb" message on the screen, saving may not be possible. You can try pressing ⌘-Option-Esc to quit the program in use when the problem occurred; if this works, you can then save the documents open in other programs before restarting.

To restart your Macintosh, try the following steps:

- 1** If you can, choose Restart from the Special menu or from the dialog box that's on screen.
- 2** If you can't choose Restart, hold down the ⌘ and Control keys while you press the Power On key.

This key combination restarts the computer. (Use this key combination only when choosing Restart from the Special menu does not work.)

- 3** If nothing happens, look for the reset and interrupt switches on the front of your Macintosh and press the reset switch (the one marked with a triangle).

Pressing the reset switch is like turning the power switch off and then on again. You will lose any work you haven't saved. (The interrupt switch is intended for use by programmers who have debugging software installed.)

- 4** If pressing the reset switch does nothing, turn off your computer using the power switch, wait at least 10 seconds, then turn it on again.
- 5** If the power switch doesn't turn off the computer, unplug your Macintosh.

If you suspect that the problem is with a peripheral device, such as a printer or external hard disk, turn it off for 10 seconds or more, then turn it on again and restart the Macintosh.

Solutions to common problems

The computer is turned on but the screen is dark.

The Macintosh or the monitor is not getting power, a program has darkened the screen, or the monitor controls are not adjusted properly.

- If you use a screen saver program, press a key or move the mouse to turn off the screen saver.
- Check the monitor's brightness control and turn it up if necessary.
- Check that the monitor is turned on.
- Check that the power cord is plugged in and firmly connected to the computer and that the electrical outlet has power. The power light on the computer's front panel should be on.
- If you have more than one monitor, and only one is dark, check that it is set up correctly in the Monitors control panel.

If you are displaying video from your computer on television, it is normal for your regular monitor to be darkened. See Chapter 8 of this book for more information.

When you start up, a question mark icon appears in the middle of the screen and the desktop doesn't appear.



- Your computer may be having a problem recognizing a SCSI device. Turn off external SCSI devices and restart.

If the computer starts up after you turn off your SCSI devices, read the section on SCSI devices in Chapter 5 of this manual for information on connecting SCSI devices and assigning SCSI ID numbers.

- The system software is not installed on the startup hard disk, the system software is damaged, or the hard disk is not working properly.

Continue reading this section for more information.

A disk icon with a blinking question mark appeared when you started your computer.

The blinking question mark indicates that your Macintosh cannot find system software. You may need to repair a damaged disk, or reinstall system software.



- Start your computer using the *Disk Tools* floppy disk or the *Power Macintosh CD* disc (see “Starting Up from a Built-In CD-ROM Drive” or “Starting Up from a Floppy Drive” in Chapter 10). Then refer to the *Macintosh Reference* for information on testing and repairing disks. If repairing the disk doesn’t help, follow the instructions in Chapter 10 of this book to reinstall your system software.

A disk icon with an X appeared and the floppy disk was ejected.

Your Macintosh ejected a floppy disk that is not a startup disk.



- Wait a few seconds. The computer should start up from its internal hard disk. Make sure you insert floppy disks only after the computer has begun starting up.

A “sad Macintosh” icon appeared and the computer won’t start up.

Your Macintosh cannot start up because of a problem with the system software or the computer hardware.



- Eject any floppy disks by turning off the computer and then holding down the mouse button while you turn the computer on again. Try starting up with a different startup disk (such as the *Disk Tools* floppy disk or the *Power Macintosh CD* disc). If the “sad Macintosh” icon appears again, consult the service and support information that came with your computer for instructions on how to contact an Apple-authorized service provider or Apple for assistance.

The hard disk icon does not appear on the desktop.

If you don't see a hard disk icon on the desktop, try the following:

- If the hard disk is internal, shut down your Macintosh, wait at least 10 seconds, and then turn it on again.
- If the hard disk is external, make sure it is turned on and its cable is connected firmly; then restart the Macintosh.
- Check the ID numbers of all SCSI equipment connected to your computer. See the information on SCSI devices in Chapter 5 of this book.
- If the hard disk is your startup disk, start your computer using the *Disk Tools* floppy disk or the *Power Macintosh CD* disc (see “Starting Up from a Built-In CD-ROM Drive” or “Starting Up from a Floppy Drive” in Chapter 10). Then refer to the *Macintosh Reference* for information on testing and repairing disks. If repairing the disk doesn't help, follow the instructions in Chapter 10 of this book to reinstall your system software.

Icons do not appear correctly on your screen.

You need to “rebuild the desktop”—a process that helps your Macintosh keep track of files and folders on your hard disks.

- Hold down the Option and ⌘ keys while starting up your computer. Keep holding down the keys until you see a message asking whether you want to rebuild the desktop. Click OK.

Your Macintosh can't read a floppy disk.

If you see a message that a floppy disk is unreadable, try one of the following:

- If the disk has never been used, you may simply need to initialize it. See the *Macintosh Reference* for information.
- The disk might be damaged. See the *Macintosh Reference* for information on testing and repairing disks.

If you are trying to use a DOS disk:

- The disk may have been formatted incorrectly on a DOS computer. On DOS computers it's possible to format a standard double-sided disk in a high-density (1440K) format, and vice versa. Disks formatted this way cannot be read by a Macintosh computer.

When formatting disks on a DOS computer, always format standard double-sided disks in the 720K format. Always format high-density disks in the 1440K format.

If a disk has been formatted incorrectly, use a DOS computer to copy its contents onto another disk that has been properly formatted.

The pointer doesn't move when you move the mouse.

The mouse is not connected properly, or its signals are not reaching the computer, or there is a software error.

- Turn off the computer using the power button, check that the mouse cable is connected properly, then restart the computer.
- Clean the mouse (see the *Macintosh Reference*).
- If you have another mouse or pointing device, try connecting and using it. (Turn off the computer first.) If it works, there is probably something wrong with your mouse.
- Restart the Macintosh with a different startup disk (such as the *Disk Tools* disk or the *Power Macintosh CD* disc). If the mouse works, reinstall system software on your startup disk.
- If the problem recurs, it may be due to an incompatible program. Make sure that all programs, desk accessories, and system extensions you're using are compatible with the system software.

If none of these procedures solves the problem, consult the service and support information that came with your computer for instructions on how to contact an Apple-authorized service provider or Apple for assistance.



Typing on the keyboard produces nothing on the screen.

The insertion point hasn't been set, no text is selected, the keyboard is not connected properly, the keyboard's signals are not reaching the computer, or there is a software error.

- Make sure the program you want to type in is the active program.
- Place the pointer in the active window and click to set an insertion point or drag to select text (if applicable).
- Turn off the computer using the power button, then check that the keyboard cable is connected properly at both ends.
- Turn off the Macintosh, then connect the keyboard cable to the other ADB port (marked with the ⌘ icon) on the keyboard. (You may have to unplug the mouse to do this.) If your keyboard cable is connected to your monitor, connect it to another ADB port on the monitor or directly to the computer's ADB port (on the back of the computer). If typing still doesn't work, the problem is most likely in the keyboard itself.
- If you have access to another keyboard, try using it instead. (Turn off the computer before connecting it.)
- Restart the Macintosh with a different startup disk (such as the *Disk Tools* floppy disk or the *Power Macintosh CD* disc). If this solves the problem, reinstall system software on your startup disk.

If none of these procedures solves the problem, consult the service and support information that came with your computer for instructions on how to contact an Apple-authorized service provider or Apple for assistance.

A dialog box with a bomb appears.

Your system has a software problem.

- Write down what you were doing when the message appeared, and write down the number on the message, if there is one.
- Restart your Macintosh (see “Start Over” earlier in this chapter). Most software problems are temporary and restarting usually corrects the problem.
- If the problem recurs, check the startup disk and program you are using when the message appears. Make sure that all programs, desk accessories, and system extensions you’re using are compatible with the system software. Reinstalling the system software may correct the problem.
- Sometimes incompatible system extensions or control panels can cause system software problems. Restart while holding down the Shift key; this temporarily turns off all system extensions. If your computer works normally with this method, then remove all extensions from the Extensions folder (inside the System Folder) and put them back into the Extensions folder one at a time. Restart after you add each extension. This procedure should identify any incompatible extensions.

You can’t start your program or it quits unexpectedly.

When you try to open a program, you see a message that not enough memory is available.

The program needs more memory or the Macintosh ran out of memory.

- Quit the programs that you have open and then open the program you want to use, or restart your Macintosh.
- Use the program’s Info window to give it more memory. For more information see the section in the *Macintosh Reference* on setting up your programs.
- Use the Memory control panel to turn on virtual memory. This is especially important if you are using any programs designed for Power Macintosh. For more information, see Chapter 6 of this book, and read the information on “Using Hard Disk Space As Memory” in the *Macintosh Reference*.



You see a message that your application program can't be opened because a file can't be found.

Power Macintosh programs use special files called *shared libraries*. Any necessary shared libraries should be installed automatically when you install Power Macintosh programs.

- Follow the directions that came with your program to reinstall the program. If the shared library is still missing, contact the software program's manufacturer for assistance.

You experience problems using an older Macintosh program.

Some older Macintosh programs are not completely compatible with the Power Macintosh computers.

- Open the Memory control panel and turn off Modern Memory Manager. For more detailed instructions, see "Using Older Macintosh Programs" in Chapter 6 of this book.

You experience problems using a document from a DOS computer.

If you can't open a DOS document using a Macintosh program, try the following:

- Open the document from within the program by using the Open command in the program's File menu.
- Use the PC Exchange control panel to change the document's type to one that can be opened by the program. See "Exchanging Files with DOS or Windows" in the appendix.

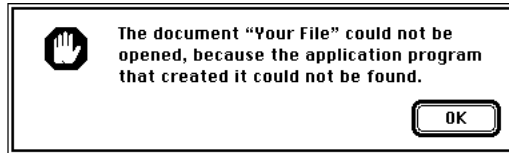
If a DOS document is displayed incorrectly, or you see strange codes or characters in the document:

- Your application program may have special procedures for opening and saving documents with different file formats. See the information that came with your application program.
- Try opening the document in another program.

Note: Some characters that can be displayed on the Macintosh are not accurately displayed on DOS computers.

You see a message that an application program can't be found.

The dialog box below appears if you try to open a document created using software that is not on your hard disk.



Normally, you see this message if you try to open a document that came from another Macintosh with software that is different from yours.

- Some documents can be opened by more than one application program. Try starting a program that you think might be able to open the document, then choose use the Open command from the program's File menu to try to open the document. (Or drag the document to the program's icon. If the program can open the document, the program's icon highlights.)
- Purchase and install the correct software to use the document, or find out if the original owner of the document can convert it to a form that one of your programs can use.
- Don't try to open the files in your System Folder. Most of the System Folder files are used by your computer for internal purposes, and are not intended to be opened.
- Rebuild your desktop by holding down the Option and ⌘ keys while starting up your computer. Keep holding down the keys until you see a message asking whether you want to rebuild the desktop. Click OK.
- If the document is from a DOS computer, use the PC Exchange control panel to specify which Macintosh program will open the document. See "Exchanging Files with DOS or Windows" in the appendix.

Read this chapter only if you need
to reinstall system software

10

Reinstalling System Software



System software is the set of programs and other files that your computer uses to start itself up, keep track of your files, and run the application programs you use. System software is kept in the folder called the System Folder. When you turn on your computer, it looks for a *startup disk*, which is a disk that contains the system software. The startup disk is usually the hard disk that's inside your computer, though another hard disk or a floppy disk can also be a startup disk.

The accessory kit that came with your Macintosh contains either a set of floppy disks with the system software on them or a CD-ROM disc labeled *Power Macintosh CD*. You can use the floppy disks or the CD-ROM disc to install the system software on your Macintosh if you need to do so.

Do you need to install system software?

Your Macintosh came with all the necessary system software installed on your hard disk. Unless a problem develops later, you don't need to reinstall the software.

If you have a problem with your system software, you may see this icon in the middle of the screen:



If you see this icon, start your computer using the *Disk Tools* floppy disk or the *Power Macintosh CD* disc. Then refer to the *Macintosh Reference* for information on testing and repairing disks.

If repairing the disk doesn't help, follow the instructions in this chapter to start up your computer and reinstall system software.

IMPORTANT If you've used a backup program to make a backup copy of your system software, you should reinstall your system software from your backup disks. See the documentation that came with your backup program.

Starting up from a built-in CD-ROM drive

If your computer has a built-in CD-ROM drive you can use the CD-ROM disc labeled *Power Macintosh CD* to start your computer.

- 1 **Turn on your computer.**
- 2 **Place the *Power Macintosh CD* disc in the CD-ROM drive's tray with the label facing up, and close the tray.**

Your Macintosh recognizes the CD as a startup disk, and in a few seconds the desktop appears. (The disc's window is open on the desktop.)

IMPORTANT Use the *Power Macintosh CD* disc as a startup device only when your startup disk is not working properly, to reinstall or make a copy of your system software files.

Starting up from a floppy drive

Unless your computer has a built-in CD-ROM drive, the accessory kit that came with your computer contains a set of floppy disks. You can use the *Install Me First* floppy disk to start your computer:

- Insert the disk into the floppy drive and turn on your computer.

An Installer screen opens automatically to let you reinstall system software on your hard disk. Follow the instructions in the next section to reinstall system software.

If you want to start your computer from a floppy disk without installing system software, use the *Disk Tools* disk (insert the *Disk Tools* disk into the floppy drive and turn on your computer).

Reinstalling system software

Before you begin, you must start your computer following the instructions in the previous section under “Starting Up From a Built-In CD-ROM Drive” or “Starting Up From a Floppy Drive.”

You use the Installer to reinstall system software.

- If you started up from the *Power Macintosh CD* disc, double-click the icon named Install System Software.
- If you started up from the *Install Me First* floppy disk, the Installer opens automatically.

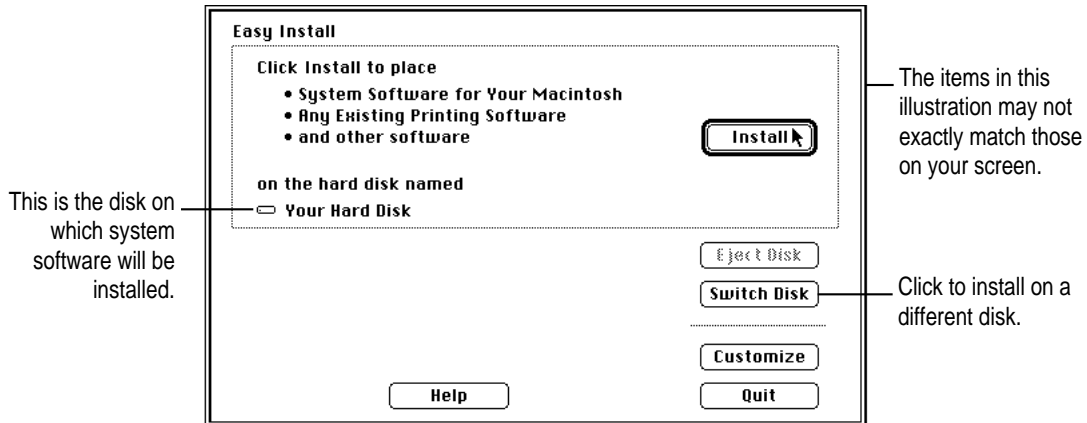
Follow these steps to install system software:

- 1 In the Welcome dialog box that appears, click OK.



- 2 Check that the disk named in the box is the one on which you want to install system software.

If not, click the Switch Disk button until the correct disk name appears.



- 3 In the Installer dialog box, click Install.

The Easy Install status box appears and keeps you informed of progress during installation.

If you are installing from floppy disks, follow the instructions asking you to insert different disks.

- 4 If you see a message telling you that you need to restart your system, click Restart. Otherwise, click Quit.

If a message reports that installation was not successful, try installing again. (Follow the instructions on the screen.)

That's it. You've installed Macintosh system software on your startup disk.

Custom installation

You can use the Installer’s “custom” feature to install specific items from a list. If you click the Customize button in the Installer dialog box, you’ll see the list. Hold down the Shift key and click the items you want. Then click Install.

If you use Easy Install, all the items you need are installed automatically. You don’t need custom installation.

Reinstalling the CD-ROM software

Your built-in CD-ROM drive requires special software, which is already installed on your hard disk. If you experience problems using your CD-ROM drive, try reinstalling the CD-ROM software.

When you reinstall the CD-ROM software, you should also reinstall the QuickTime software.

Follow these steps:

- 1** Place the *Power Macintosh CD* disc in the CD-ROM drive’s tray with the label facing up, and close the tray.

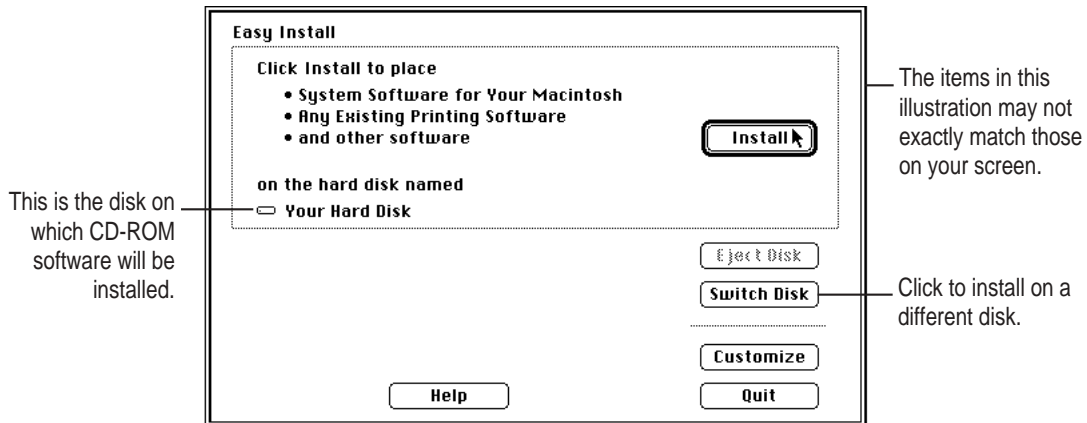
The *Power Macintosh CD* disc’s window opens automatically.

- 2** Double-click the Install System Software icon to open the Installer.
- 3** In the Welcome dialog box that appears, click OK.



- 4 **Check that the disk named in the box is the one on which you want to install CD-ROM software.**

If not, click the Switch Disk button until the correct disk name appears.



- 5 **In the Installer dialog box, click Customize.**

You see a list of items you can install.

- 6 **Hold down the Shift key and click to select “CD-ROM System Software” and “QuickTime Software.”**

- 7 **Click Install.**

The CD-ROM and QuickTime software are automatically installed and placed in the System Folder on your hard disk.

- 8 **When you see a message reporting that installation was successful, click Restart.**

Your CD-ROM drive will now operate normally. (If a message reports that installation was not successful, follow the instructions on the screen to try installing again.)

Copying system software from the *Power Macintosh CD* disc

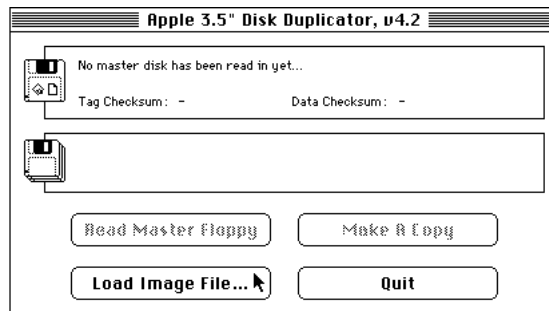
You can copy the Macintosh system software from the *Power Macintosh CD* disc to floppy disks. You need to use the Disk Copy program to make a copy of the system software. (Dragging system software files to floppy disks does not work because the Installer expects the files to be in certain places on the floppy disks.)

To copy the software, you'll need five or more high density (1.4 MB) floppies.

- 1** Insert the *Power Macintosh CD* disc into the CD-ROM drive.
- 2** Open the folder named "Disk Images" and locate the Disk Copy icon.
You may need to scroll the window to see the icon.
- 3** Double-click the Disk Copy icon to start the program.
- 4** Click anywhere on the screen to remove the explanatory dialog box.

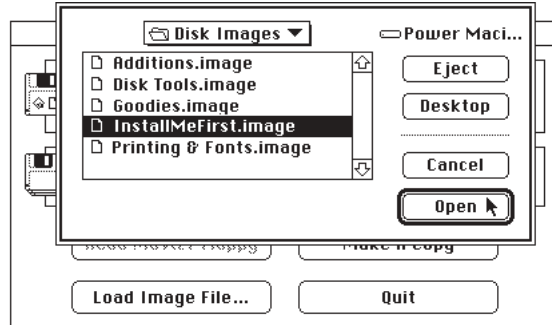
The Disk Copy window appears.

- 5** In the window, click Load Image File.



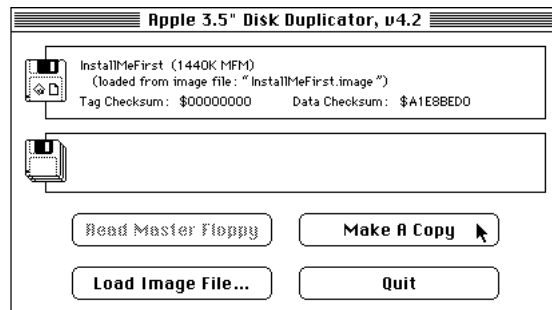
A dialog box appears, in which you can select the disk image that you want to copy. Each image file contains the software for one system software disk.

- 6 Click the name of a disk image, then click Open.

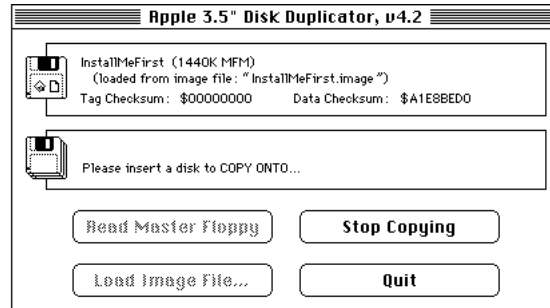


In a few moments a message appears near the top of the window, indicating that the disk image has been loaded.

- 7 Click Make A Copy.



- 8 **When you see a message telling you to insert a disk, insert a floppy disk.**



If the disk already contains information, you're asked whether you want to replace the contents of the disk. Click Duplicate if you want to erase the information on the disk and replace it with a copy of system software. Otherwise, eject the disk and insert a different disk.

- 9 **When you see a message telling you that the disk was duplicated successfully, click Load Image File to copy another disk image or click Quit to leave the program.**

The program ejects the disk when it has copied the image.

- 10 **Repeat steps 6 through 9 for each disk image until you have copied all the disk image files.**

Store the backup disks in a safe place.

Read this appendix for information
on using the Macintosh PC
Exchange program

Appendix Exchanging Files With DOS or Windows

Macintosh PC Exchange is software included with your computer that lets you easily exchange documents between your Macintosh and a DOS or Windows computer. You can use Macintosh PC Exchange to create floppy disks compatible with DOS computers.

Macintosh PC Exchange at a glance

Using the PC Exchange control panel, you can specify which Macintosh programs are used to open DOS documents.

For example, DOS documents whose names end with this suffix . . .

. . . are to be opened by this program . . .

. . . as this type of document.

You can open, edit, and save DOS documents using your favorite Macintosh application programs.

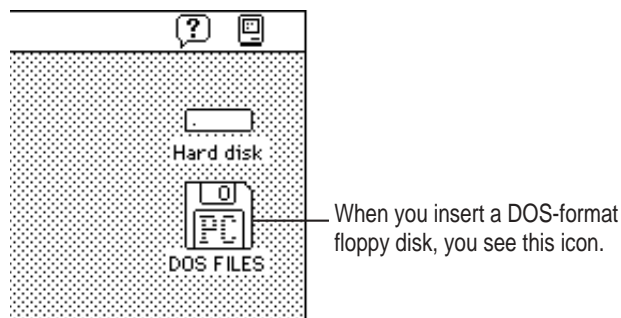
You can use and create DOS-format disks.

DOS Suffix	Application Program	Document Type
.ILL	Adobe Illustrator® 3.0	EPSF
.CAN	Canvas™ 3.0	TEXT
.WK1	Claris Resolve	TEXT
.WK3	Lotus 1-2-3	TEXT
.HDW	MacDraw Pro	PICT
.MW2	MacWrite II	TEXT
.XLS	Microsoft Excel 3.0	TEXT

Using DOS-format disks on your Macintosh

The *format* of a disk refers to the way the computer prepares the disk to receive information. Macintosh computers and DOS computers use different disk formats, but with Macintosh PC Exchange installed in your Macintosh system, your Macintosh can read disks of either format.

To use a DOS-format disk on your Macintosh, simply insert the disk into your computer's floppy disk drive. The disk's icon appears on the desktop. You can open the disk by double-clicking its icon—the same way you would open an ordinary Macintosh disk.



If you see a message that the disk is unreadable, see “Solutions to Common Problems” in Chapter 9 of this book.

WARNING Do not attempt to repair a DOS-format disk using disk repair programs intended for use on the Macintosh. Doing so is likely to destroy any information on the disk. If you must repair a DOS-format floppy disk, use a disk repair utility on your DOS computer.

Creating a blank DOS-format disk

When you erase or initialize a disk on the Macintosh, you can choose its format—either Macintosh or DOS.

WARNING Before you erase or initialize a disk, be sure that the disk contains no information you want to save.

To create a blank DOS-format disk on your Macintosh, follow these steps:

1 Insert a floppy disk.

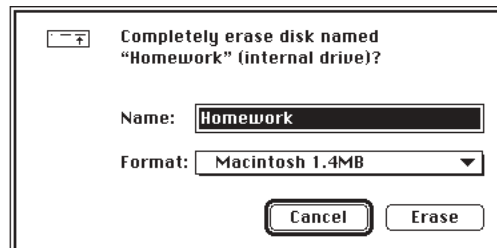
- If the disk has not been initialized, a dialog box appears in which you can specify the disk's name and format.



- If the disk has already been used, you'll need to erase it. Select the disk, then choose Erase Disk from the Special menu.

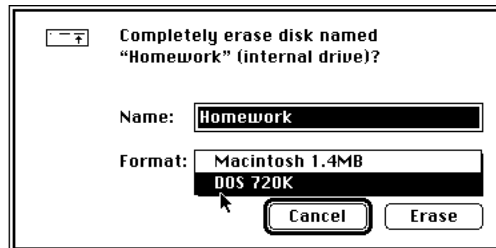


A dialog box appears in which you can specify the disk's name and format.



- 2 Type a name for the disk.
- 3 Choose the disk format you want from the Format pop-up menu.

The list of available formats varies depending on your disk drive and the capacity of the disk. Choose DOS if you plan to use the disk on both Macintosh and DOS computers.



- 4 Click Erase (or Initialize).

If you're initializing a disk, an alert box appears. Click the Continue button.

The Macintosh prepares the disk in the format you chose.

Usually it takes less than a minute to initialize or erase a floppy disk.

However, if portions of the disk have been damaged, the initialization process may take several minutes.

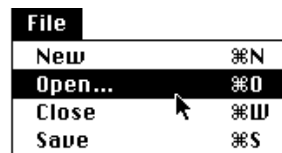
If you changed the disk's format, the disk's icon will change when you reinsert the disk.

Opening DOS documents on your Macintosh

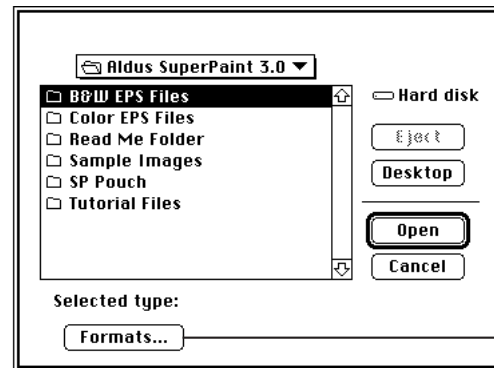
Opening a document from within a Macintosh program

The surest way to open a DOS document on the Macintosh is to use the Open command from within an application program.

- 1 Open the program you want to use.
- 2 Choose Open from the File menu.



A directory dialog box appears.



Many programs have buttons or pop-up menus that let you open or import documents of a particular file format.

- 3 Select the document you want, and click Open.

If you have problems opening the document, see “Solutions to Common Problems” in Chapter 9 of this book.

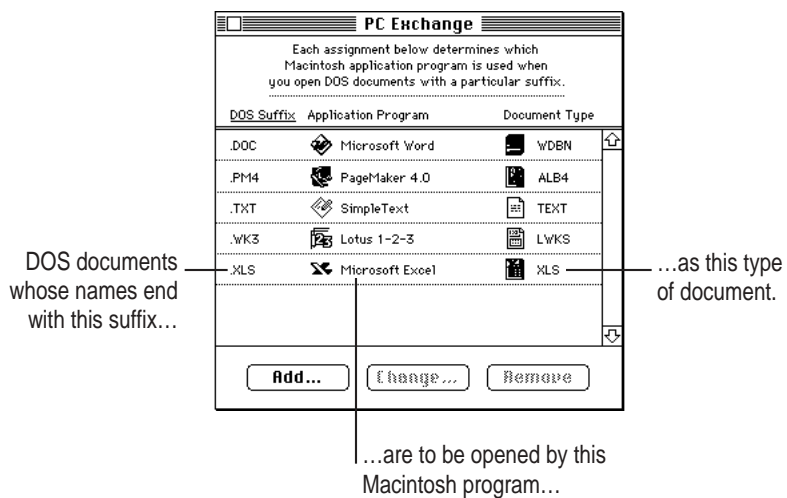
Opening a document by double-clicking its icon

Before you can open a DOS document by double-clicking its icon, you need to use the PC Exchange control panel to specify which Macintosh application programs will open DOS documents, as described next.

Assigning Macintosh programs to DOS documents

Using the PC Exchange control panel, you can assign Macintosh application programs to DOS documents. For example, you can specify that all DOS documents whose filenames end with the suffix .XLS are to be opened in the Macintosh program Microsoft Excel.

The figure below shows the PC Exchange control panel with some assignments already created.



Before you can assign a Macintosh program to a group of DOS documents, you need to answer three questions:

- **What suffix do the documents have in common?**

Many DOS programs automatically add a three-letter suffix (or filename *extension*) to a document's name. For example, these PageMaker documents all share the suffix .PM4:

NEWS.PM4
REPORT.PM4
RESUME.PM4

- **What Macintosh application program do you want to use to open the documents?**

Each Macintosh document has a *creator*—that is, the Macintosh program used to create the document. When you double-click a document's icon, the Macintosh opens the program that created the document.

Using the PC Exchange control panel, you can assign Macintosh programs to DOS documents as “creators.”

- **What type of document is it?**

Most programs are able to open or import some, but not all, types of documents. A document's *type* is a three- or four-letter code (such as TEXT or PICT) that tells a program whether or not it can recognize the document. A program displays documents of types it can recognize in its directory dialog box.

Unless you specify otherwise, the Macintosh assumes that all DOS documents have the document type TEXT. You can assign different types to some DOS documents. See the next section.

A document's type is different from its *file format*, which refers to the way information within the document is encoded. If a program is unable to accurately interpret a document's file format, the document's formatting may be displayed incorrectly. (To find out which file formats a program can understand, refer to the documentation for the program.)




Recommended assignments for some widely used application programs

The information in this section will help you assign documents from some widely used DOS/Windows programs to some widely used Macintosh programs. (For more information, see the documentation for your application programs.)

AMI Pro (Windows), version 2.0

Documents in AMI Pro (Windows) version 2.0 are automatically saved with the suffix .SAM.





To open these documents on the Macintosh, add one of the following assignments to the PC Exchange control panel:

DOS suffix	Macintosh application	Document type
.SAM	 MacWrite® II (version 1.1)	 TEXT
.SAM	 Microsoft Word (version 5.0)	 TEXT
.SAM	 WordPerfect (version 2.0)	 TEXT
.SAM	 WriteNow (version 2.2)	 TEXT

Lotus 1-2-3 (Windows), version 1.0

Documents in Lotus 1-2-3 (Windows) version 1.0 are automatically saved with the suffix .WK3.





To open these Lotus 1-2-3 documents on the Macintosh, add one of the following assignments to the PC Exchange control panel:

DOS suffix	Macintosh application	Document type
.WK3	 Lotus 1-2-3 (version 1.0)	 TEXT
.WK3	 Microsoft Excel (version 3.0)	 TEXT

Microsoft Excel (Windows), version 3.0

Documents in Microsoft Excel (Windows) version 3.0 are automatically saved with the suffix .XLS.



To open these Microsoft Excel documents on the Macintosh, add one of the following assignments to the PC Exchange control panel:

DOS suffix	Macintosh application	Document type
.XLS	 Lotus 1-2-3 (version 1.0)	 TEXT
.XLS	 Microsoft Excel (version 3.0)	 TEXT

Microsoft Word (Windows), version 2.0

Documents in Microsoft Word (Windows) version 2.0 are automatically saved with the suffix .DOC.



To open these documents in Microsoft Word (Macintosh) version 5.0, add the following assignment to the PC Exchange control panel:

DOS suffix	Macintosh application	Document type
.DOC	 Microsoft Word (version 5.0)	 WDBN

PageMaker (Windows), version 4.0

Documents in PageMaker (Windows) version 4.0 are automatically saved with the suffix .PM4.







To open these documents in PageMaker (Macintosh) version 4.0, add the following assignment to the PC Exchange control panel:

DOS suffix	Macintosh application	Document type
.PM4	 PageMaker (version 4.0)	 ALB4

Quattro (DOS), version 3.0

When saving documents in Quattro (DOS) version 3.0, be sure to save them with the suffix .WK1 (rather than the default suffix, .WQ1). Quattro saves documents ending in .WK1 in the Lotus 1-2-3 file format, which can be interpreted by many Macintosh spreadsheet programs.



To open these Quattro documents on the Macintosh, add one of the following assignments to the PC Exchange control panel:

DOS suffix	Macintosh application	Document type
.WK1	 Claris Resolve™ (version 3.0)	 TEXT
.WK1	 Lotus 1-2-3 (version 1.0)	 TEXT
.WK1	 Microsoft Excel (version 3.0)	 TEXT

Ventura Publisher (Windows), version 3.2

Documents in Ventura Publisher (Windows) version 3.2 are automatically saved with the suffix .CHP.

To open these documents in Ventura Publisher (Macintosh) version 3.2, add the following assignment to the PC Exchange control panel:

DOS suffix	Macintosh application	Document type
.CHP	 Ventura Publisher (version 3.2)	 VCHP

WordPerfect (DOS), version 5.1

WordPerfect (DOS) version 5.1 does not automatically add a suffix to the names of documents. The easiest way to open WordPerfect (DOS) documents on the Macintosh is by choosing the Open command from within an application program.

Adding an assignment to the PC Exchange control panel

To add an assignment, follow these steps:

- 1 **Choose Control Panels from the Apple (🍏) menu.**

The Control Panels folder opens.

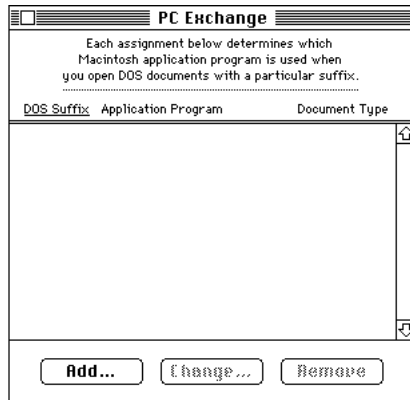
- 2 **Open the PC Exchange control panel.**

Double-click the PC Exchange icon, or select the icon and choose Open from the File menu.



PC Exchange

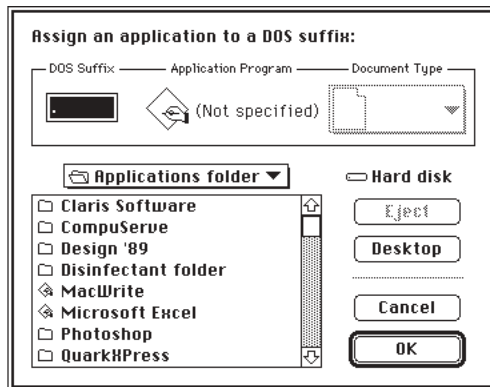
The PC Exchange control panel appears.



- 3 Click the Add button.



A dialog box appears in which you can specify a DOS suffix and its corresponding Macintosh application program and document type.



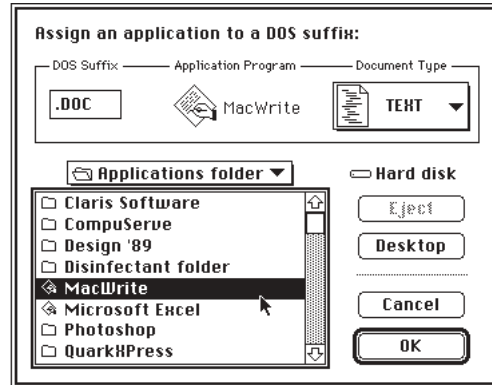
- 4 Type a three-letter DOS suffix in the DOS Suffix box.



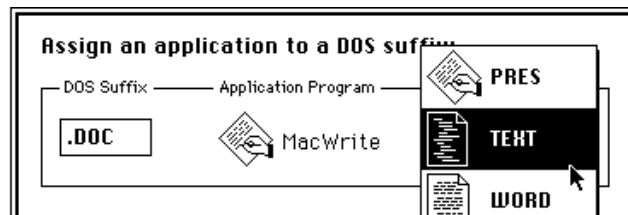
To specify which Macintosh program will open DOS documents with *no suffix*, click inside the box to set the insertion point, but leave it blank.



- 5 Choose a Macintosh application program from the lower section of the dialog box.



- 6 Choose a document type from the Document Type pop-up menu.



Document types are indicated by icons and four-letter codes whose meanings are seldom obvious. For help choosing the correct document type, see the information in the previous section, “Recommended Assignments for Some Widely Used Application Programs.”

If you don't know which document type to choose, try TEXT.

- 7 Once you've specified a DOS suffix, a Macintosh application program, and the appropriate document type, click OK.

The assignment is added to the list in the control panel.

Trying out an assignment

To try out an assignment you've added to the PC Exchange control panel, follow these steps:

1 Insert a DOS-format floppy disk and open its icon.

PC Exchange assignments take effect when you insert a floppy disk, or when you open a DOS-format floppy disk. (If the disk window was already open, you need to close it and open it again.)

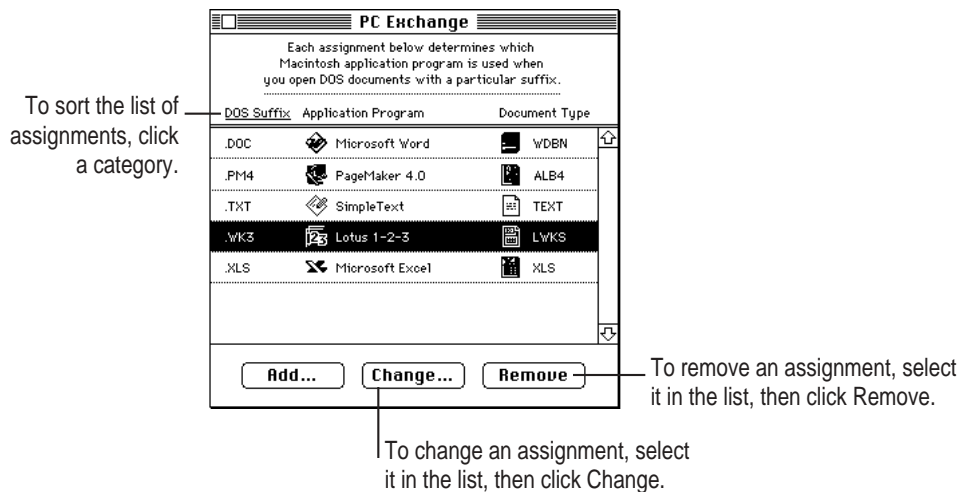
2 Double-click the icon of a DOS document whose filename ends with the suffix you specified.

The document is opened by the appropriate Macintosh application program. (You might see a message that the document's file format is being converted.)

If you have problems opening documents, see "Solutions to Common Problems" in Chapter 9 of this book.

Editing the list of assignments

You can change, remove, and sort assignments in the PC Exchange control panel.



Sharing assignment lists with other users

The list of assignments is stored in the PC Exchange Preferences file. This file is stored in the Preferences folder inside the System Folder.



PC Exchange Preferences

You can make sure that every user of Macintosh PC Exchange in your office uses the same assignments. Make copies of the PC Exchange Preferences file and place one copy in the Preferences folder (inside the System Folder) of each user's Macintosh.

Do not change the name of the PC Exchange Preferences file.

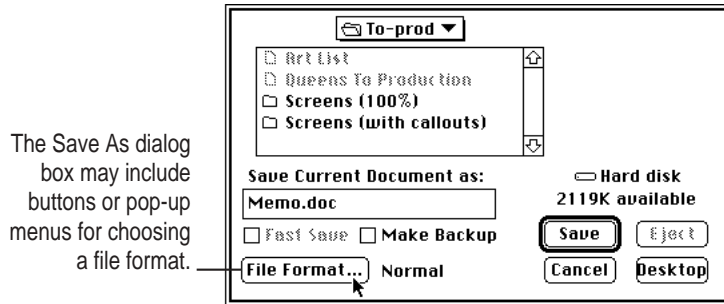
Saving documents onto a DOS-format disk

You save documents onto a DOS-format disk the same way you save them onto a Macintosh disk—by choosing the Save command from the File menu.

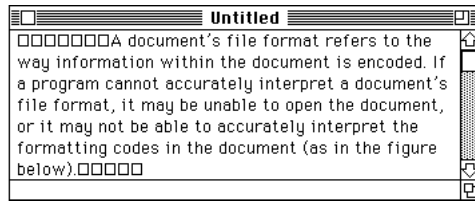
IMPORTANT Be sure to leave at least 5K of extra disk space when you save or copy files onto a DOS-format floppy disk. (The Macintosh needs this space to store Macintosh-specific information about files on the disk, such as the location of icons and windows on the Macintosh desktop.)

Choosing a file format

In some programs you'll have the choice of saving the document in one of several file formats.



A document's *file format* refers to the way information within the document is encoded. If a program cannot accurately interpret a document's file format, it may display the document incorrectly (as in the figure below).



When you save a document that you plan to use with another program, be sure to save it in a file format that the other program can understand. (To find out what file formats a program is able to open, import, and save, see the documentation you received with the program.)

Naming files for use on both Macintosh and DOS computers

On DOS computers, filenames are limited to eight characters (plus a three-letter suffix) and may not contain spaces. The rules for naming Macintosh files are less restrictive. Therefore, when working on the Macintosh, it's possible to give a file a name that would be illegal on DOS computers.

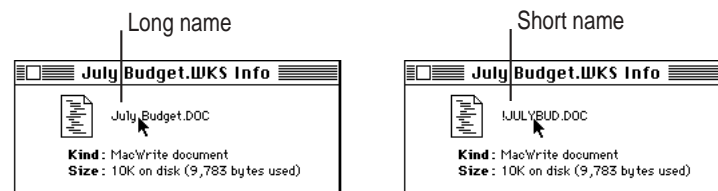
For example, suppose you created a file on your Macintosh named
July Budget.DOC

If you viewed the same file on a DOS computer, its name would be
!JULYBUD.DOC

The exclamation mark (!) indicates that the name has been shortened.

A file can thus have two names: a long name (for when the file is displayed on the Macintosh) and a short name (for when it's displayed on a DOS computer).

While using a DOS-format floppy disk on the Macintosh, you can see a document's short name by selecting the document, choosing the Get Info command from the File menu, and clicking the document's name in the Info dialog box. (For this procedure to work, you must have the File Sharing Extension installed.)



Viewing the contents of a disk on your DOS computer

When you view the directory of a disk on your DOS computer, you might notice additional directories named RESOURCE.FRK. These directories contain important information, known as *resources*, which are contained in some Macintosh documents.

WARNING Do not delete or move any directories named RESOURCE.FRK, and do not move any files out of these directories.



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The Apple Publishing System

This Apple manual was written, edited, and produced on a desktop publishing system using Apple Macintosh computers and QuarkXPress. Technical illustrations were drawn in Adobe™ Illustrator; screen shots were created and modified with system software, Exposure Pro, Aldus SuperPaint, and Adobe Photoshop. Proof pages were created on Apple LaserWriter printers and on QMS and Tektronix color printers. Final pages were output directly to separated film on a PostScript™-driven imagesetter.

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